

PENYELARAS PROGRAM SEEP (MODUL)

SOLOMON KUDIK
KETUA PENOLONG PENGARAH KANAN
UNIT SAINS DAN MATEMATIK,
JABATAN PENDIDIKAN NEGERI SARAWAK

PENYELARAS SUBJEK

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RAHIMAH BINTI ABDUL RAJAK - PENOLONG PENGARAH (**BAHASA INGGERIS**)

URUSETIA

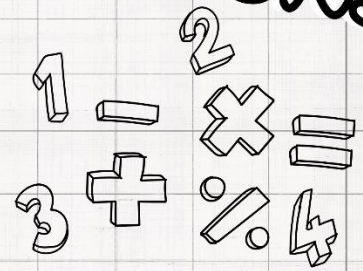
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PANEL PENULIS

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KALAIARASAN A/L SUBRAMANIAM	SMK LONG LAMA
AGNESIA ANAK WALTER	SMK TATAU
SITI NURJIRAH BINTI SIBI	SMK SADONG JAYA
KO ING SIEW	SMK JALAN OYA
KOH KEE HIN	SMK JALAN OYA

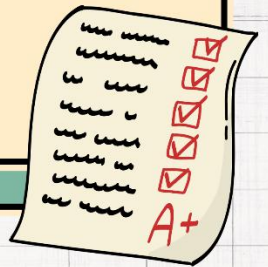
MODULE INSTRUCTIONS

- The topics selected in this module are based on Form 1 Syllabus. The selection of topics is also based on the importance of understanding for SPM. Therefore, only a few topics from the Form 1 syllabus were selected.
- Each set of exercises is provided for each week according to the arrangement of the Form 1 textbook. This means, 18 sets of exercises for 18 weeks of SEEP tuition classes.
- Fellow teachers can choose appropriate set based on the time allocated which only 1 hour and 30 minutes per session.



THE TOPICS

- Rational Numbers
- Factors and Multiples
- Squares, Square Roots, Cubes and Cube Roots
- Algebraic Expressions
- Linear Equations
- Linear Inequalities
- Introduction to Set
- Data Handling
- The Pythagoras Theorem



CHECKLIST

☐ Date: _____

☐ Date: _____

Circle the emoji about how you understand this week's topic.



I got this!



I'm starting to get it.



I don't really get it.



I am so lost.

Today I've learnt _____

After every SEEP class, students and teachers can mark ✓ in the Checklist and write the date as a record of tracking the implementation of the module.

Don't forget to ask students to write reflections at the end of each set of exercises as a self-assessment of their understanding of learning in their respective Student Modules every end of the session!

CONTENTS

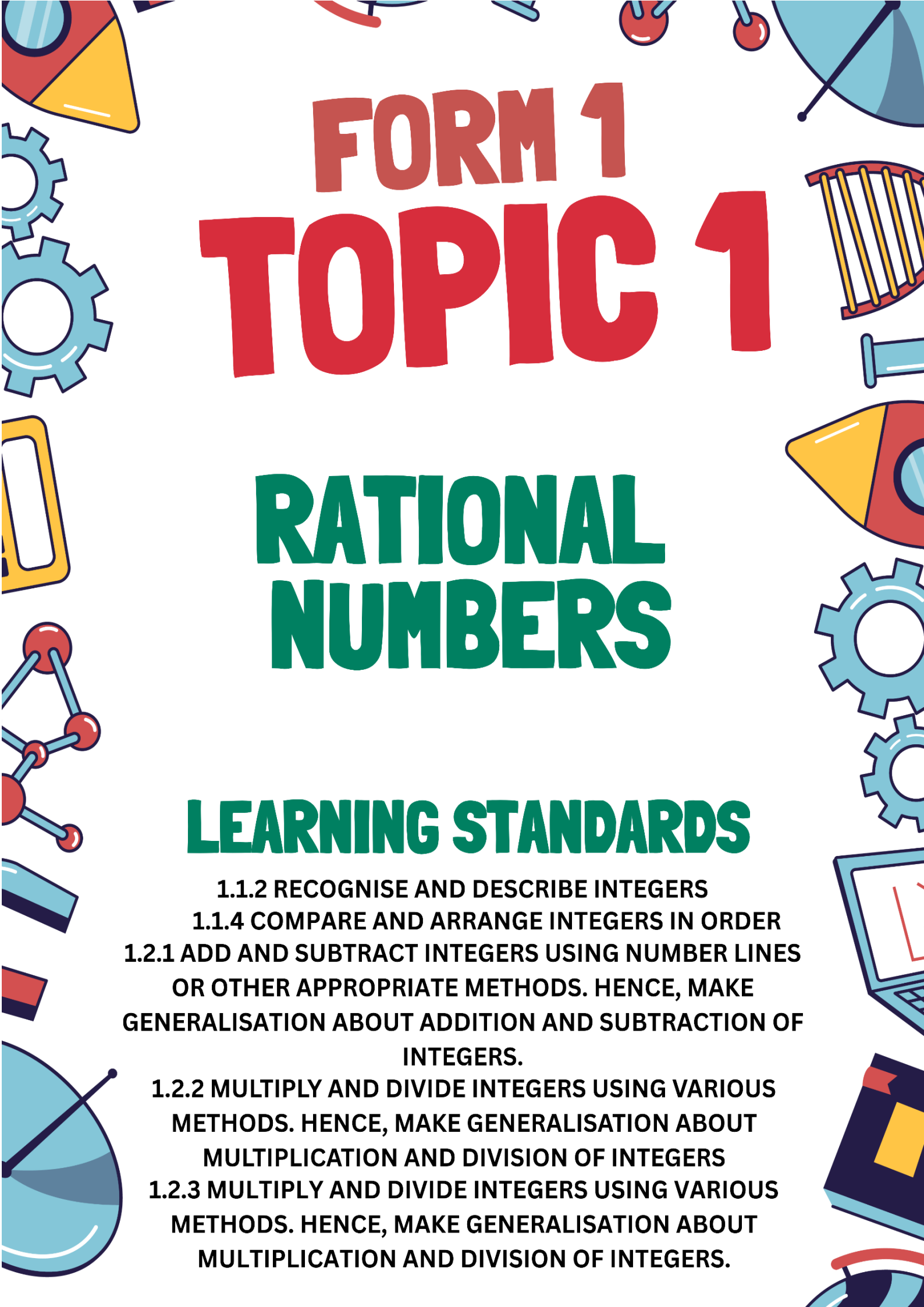
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MODULE CHECKLIST

SET	CHAPTER	LEARNING STANDARD	CHECKLIST
1	Topic 1: Rational Number	1.1.1 Recognise positive and negative numbers based on real-life situations.	☐ Date: _____
		1.1.4 Compare and arrange integers in order.	
2		1.2.1 Add and subtract integers using number lines or other appropriate methods. Hence, make generalisation about addition and subtraction of integers.	☐ Date: _____
		1.2.2 Multiply and divide integers using various methods. Hence make generalisation about multiplication and division of integers.	
3		1.2.3 Perform computations involving combined basic arithmetic operations of integers by following the order of operations.	☐ Date: _____
4	Topic 2: Factors and Multiples	2.1.1 Determine and list the factors of whole numbers and hence make generalisation about factors.	☐ Date: _____
		2.1.2 Determine and list the prime factors of a whole number and hence express the number in the form of prime factorisation.	
5		2.1.4 Determine the HCF of two and three whole numbers. 2.2.2 Determine the LCM of two and three whole numbers.	☐ Date: _____
6	Topic 3: Squares, Square Roots, Cubes and Cube Roots	3.1.1 Explain the meaning of squares and perfect squares.	☐ Date: _____
		3.1.2 Determine whether a number is a perfect square.	
		3.1.5 Determine the square roots of a number without using technological tools.	
		3.1.6 Determine the square roots of a positive number using technological tools.	
7		3.2.1 Explain the meaning of cubes and perfect cubes.	☐ Date: _____
		3.2.4 Determine the cube of a number with and without using technological tools.	
		3.2.6 Determine the cube root of a number using technological tools.	
		3.2.9 Perform computations involving addition, subtraction, multiplication, division and the combination of these operations on squares, square roots, cubes and cube roots.	

SARAWAK EDUCATION ENHANCEMENT PROGRAMME MODULE MATHEMATICS FORM 1

8	Topic 5: Algebraic Expressions	5.1.3	Determine the values of algebraic expressions given the values of variables and make connections with appropriate situations.	☐ Date: _____
		5.1.4	Identify the terms in an algebraic expression. Hence, state the possible coefficients for the algebraic terms.	
		5.1.5	Identify like and unlike terms.	
9		5.2.1	Add and subtract two or more algebraic expressions.	☐ Date: _____
		5.2.3	Multiply and divide algebraic expressions with one term.	
10	Topic 6: Linear Equations	6.1.1	Identify linear equations in one variable and describe the characteristics of the equations.	☐ Date: _____
		6.1.3	Solve linear equations in one variable.	
11		6.2.1	Identify linear equations in two variables and describe the characteristics of the equations.	☐ Date: _____
		6.2.3	Determine and explain possible solutions of linear equations in two variables.	
12		6.3.2	Solve simultaneous linear equations in two variables using various methods.	☐ Date: _____
13	Topic 7: Linear Inequalities	7.1.1	Compare the values of numbers, describe inequality and hence, form algebraic inequality.	☐ Date: _____
14		7.2.2	Solve problems involving linear inequalities in one variable.	☐ Date: _____
15	Topic 11: Introduction to Set	11.2.5	Represent the relations between sets, subsets, universal sets and complement of a set using Venn diagrams.	☐ Date: _____
16	Topic 12: Data Handling	12.1.3	Construct data representation for ungrouped data and justify the appropriateness of a data representation.	☐ Date: _____
17	Topic 13: The Pythagoras Theorem	13.1.3	Determine the length of the unknown side of a right-angled triangle.	☐ Date: _____
18		13.1.4	Solve problems involving the Pythagoras Theorem.	☐ Date: _____



FORM 1

TOPIC 1

RATIONAL NUMBERS

LEARNING STANDARDS

1.1.2 RECOGNISE AND DESCRIBE INTEGERS

1.1.4 COMPARE AND ARRANGE INTEGERS IN ORDER

**1.2.1 ADD AND SUBTRACT INTEGERS USING NUMBER LINES
OR OTHER APPROPRIATE METHODS. HENCE, MAKE
GENERALISATION ABOUT ADDITION AND SUBTRACTION OF
INTEGERS.**

**1.2.2 MULTIPLY AND DIVIDE INTEGERS USING VARIOUS
METHODS. HENCE, MAKE GENERALISATION ABOUT
MULTIPLICATION AND DIVISION OF INTEGERS**

**1.2.3 MULTIPLY AND DIVIDE INTEGERS USING VARIOUS
METHODS. HENCE, MAKE GENERALISATION ABOUT
MULTIPLICATION AND DIVISION OF INTEGERS.**

Integers

Recognise & Describe Integers

What are Integers?

Integers are whole numbers that can be **Positive** or **Negative**!

Positive Integers

+3, +7, +12...



Above Zero

Negative Integers

-4, -8, -15...



Below Zero



Negative Numbers

Zero

Positive Numbers

Compare & Arrange Integers in Order

8 > 3 8 is greater than 3

- Arranging Integers -

Order from Least to Greatest:

-6, -2, 0, 9

Smallest

Largest



Remember!

Small → Big (Ascending Order)

Big → Small (Descending Order)

SET 1

1. Write a positive integer or a negative integer that represents the following statement:

Example: Take 3 steps forward $+ 3$	(a) Take 5 steps forward
(b) Take 9 steps forward	(c) Take 12 steps forward
(d) Take 14 steps forward	(e) Take 32 steps forward

2. Write a positive integer or a negative integer that represents the following statement:

Example: Take 6 steps backward $- 6$	(a) Take 2 steps backward
(b) Take 7 steps backward	(c) Take 13 steps backward
(d) Take 28 steps backward	(e) Take 52 steps backward

3. Write a positive integer or a negative integer that represents the following statement:

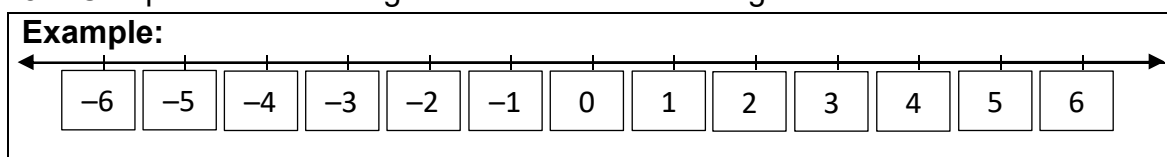
Example: A shark is 15 m below sea level $- 15$	(a) A dolphin is 12 m below sea level
(b) A penguin is 5m below sea level	(c) A diver is 30 m below sea level

(d) A blue whale is 200 m below sea level	(e) A submarine is 400m below sea level
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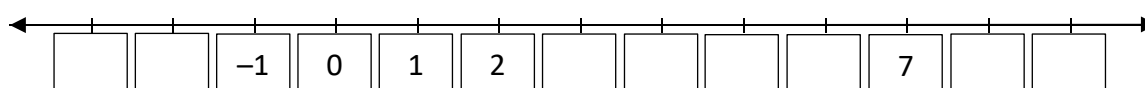
4. Write a positive integer or a negative integer that represents the following statement:

Example: A bird is 15 m above sea level + 15	(a) A kite is 10 m above sea level
(b) A cloud is 600 m above sea level	(c) A helicopter is 3000 m above sea level
(d) An aeroplane is 12 000 m above sea level	(e) A hot air balloon is 900m above sea level

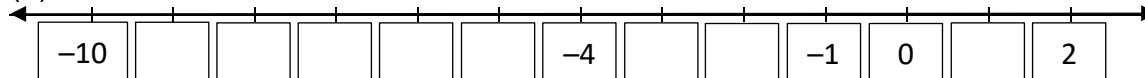
5. Complete the following number line in ascending order:



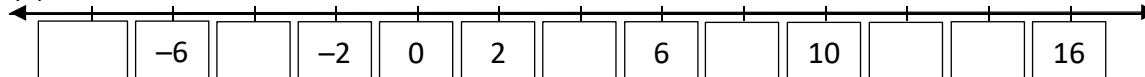
(a)



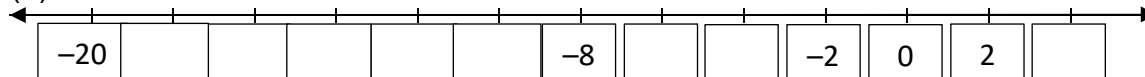
(b)



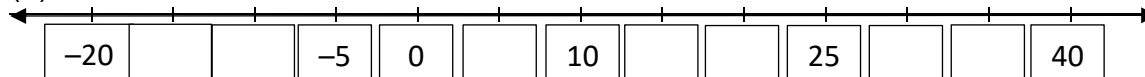
(c)



(d)

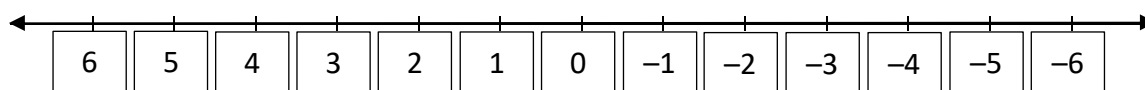


(e)

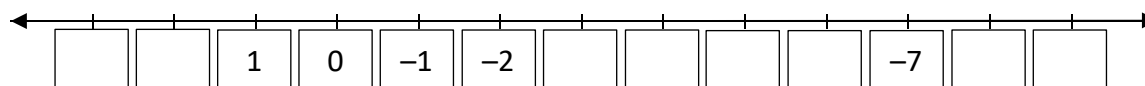


6. Complete the following number line in descending order:

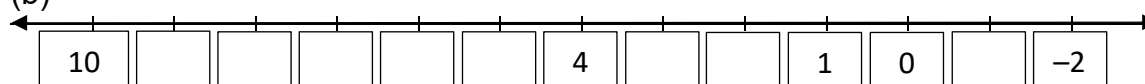
Example:



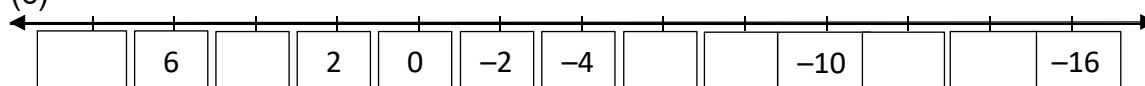
(a)



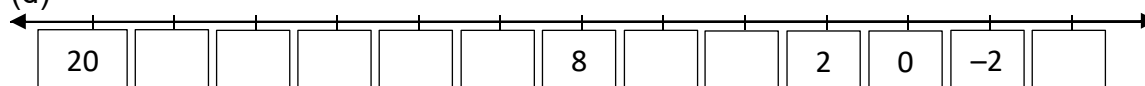
(b)



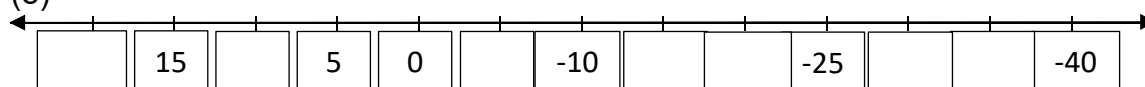
(c)



(d)



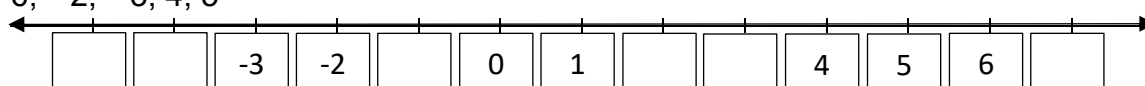
(e)



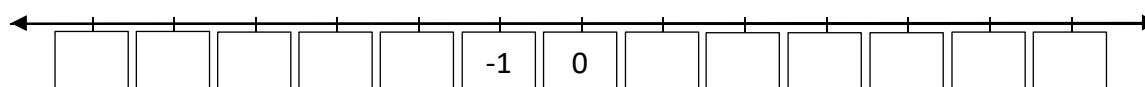
7. Represent the following integers on the number line

Example:

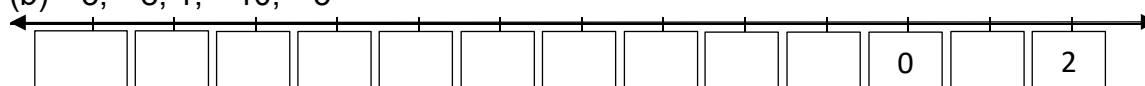
6, -2, -3, 4, 5



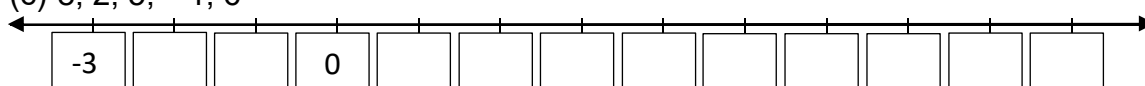
(a) 5, -6, 1, -4, 2



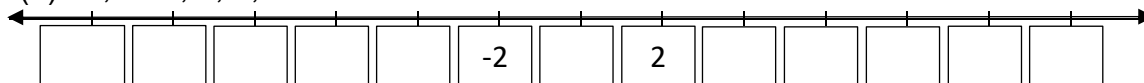
(b) -3, -8, 1, -10, -5



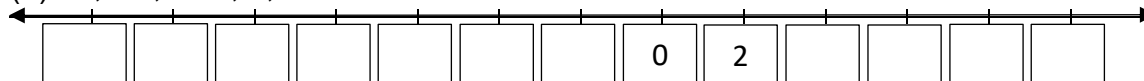
(c) 8, 2, 5, -1, 6



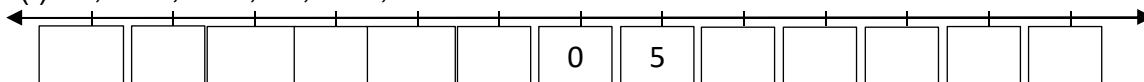
(d) 12, -16, 0, 2, -4



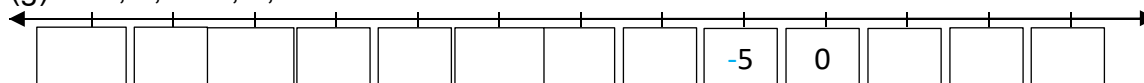
(e) 10, -8, -14, 6, -4



(f) 10, -30, -10, 25, -20,



(g) -20, 5, -45, 8, -35

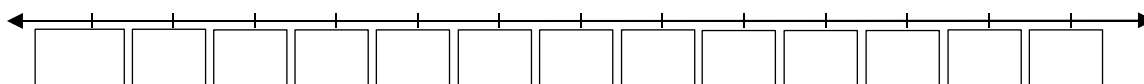


UASA PRACTICE

1. Among the following numbers, which one has the smallest value?

- A. 0 C. -5
B. 3 D. -8

2. Draw a number line to represent integers from -8 to 4.



3. A truck moves 150 km north and then 78 km south. Calculate the truck's current distance from the starting point, in km.

REFLECTION

Circle the emoji about how you understand this week's topic.

			
I got this!	I'm starting to get it.	I don't really get it.	I am so lost.

Today I've learnt _____

SET 2

1. Solve each of the following.

Example:

$$\begin{aligned} 6 + (+3) \\ = 6 + 3 \\ = 9 \end{aligned}$$



(a) $5 + (+2)$	(b) $8 + (+6)$
(c) $3 + (+8)$	(d) $6 + (+4)$

2. Solve each of the following.

Example:

$$\begin{aligned} 4 - (-8) \\ = 8 + 4 \\ = 12 \end{aligned}$$



(a) $3 - (-5)$	(b) $7 - (-9)$
(c) $1 - (-9)$	(d) $7 - (-5)$

3. Solve each of the following.

Example:

$$\begin{aligned} -5 + (-8) \\ = -5 - 8 \\ = -13 \end{aligned}$$



(a) $-4 + (-5)$	(b) $-9 + (-3)$
(c) $-6 + (-4)$	(d) $-8 + (-8)$

4. Solve each of the following.

Example:

$$\begin{aligned} -6 - (+9) \\ = -6 - 9 \\ = -15 \end{aligned}$$



(a) $-3 - (+4)$	(b) $-9 - (+9)$
(c) $-7 - (+3)$	(d) $-4 - (+9)$
(e) $-2 - (+10)$	(f) $6 - (-5)$

5. Solve each of the following.

Example:

$$(+6) \times (+3) = 18$$



(a) $(+2) \times (+3)$	(b) $3 \times (+4)$
(c) 3×3	(d) 5×2
(e) $(+3) \times 5$	(f) $7 \times (+2)$

6. Solve each of the following.

Example:

$$(+5) \times (-3) = -15$$



(a) $(+2) \times (-4)$	(b) $3 \times (-2)$
(c) $(+4) \times (-5)$	(d) $6 \times (-2)$
(e) $(+6) \times (-1)$	(f) $1 \times (-2)$

7. Solve each of the following.

Example:

$$\begin{aligned} (-2) \times (-8) \\ = 16 \end{aligned}$$



(a) $(-4) \times (-5)$	(b) $(-9) \times (-3)$
(c) $(-6) \times (-4)$	(d) $(-8) \times (-5)$
(e) $(-3) \times (-9)$	(f) $(-9) \times (-5)$

8. Solve each of the following.

Example:

$$\begin{aligned} (-6) \times (+5) \\ = -30 \end{aligned}$$



(a) $(-3) \times (+4)$	(b) $(-9) \times (+2)$
(c) $(-7) \times (+3)$	(d) $(-4) \times (+9)$
(e) $(-2) \times (+10)$	(f) $6 \times (-5)$

9. Solve each of the following.

Example:

$$\begin{aligned} (+15) \div (+3) \\ = 5 \end{aligned}$$



(a) $(+4) \div (+2)$	(b) $16 \div (+4)$
(c) $3 \div 3$	(d) $14 \div 2$
(e) $(+10) \div (+5)$	(f) $(+16) \div (+4)$

10. Solve each of the following.

Example:

$$\begin{aligned} (+21) \div (-3) \\ = -7 \end{aligned}$$



(a) $(+8) \div (-4)$	(b) $10 \div (-2)$
(c) $(+16) \div (-4)$	(d) $6 \div (-2)$
(e) $(+18) \div (-2)$	(f) $(+20) \div (-4)$

11. Solve each of the following.

Example:

$$\begin{aligned} (-32) \div (-8) \\ = 4 \end{aligned}$$



(a) $(-4) \div (-2)$	(b) $(-9) \div (-3)$
(c) $(-8) \div (-4)$	(d) $(-25) \div (-5)$
(e) $(-10) \div (-5)$	(f) $(-20) \div (-4)$

12. Solve each of the following.

Example:

$$\begin{aligned} (-45) \div (+5) \\ = -9 \end{aligned}$$



(a) $(-20) \div (+4)$	(b) $(-8) \div (+2)$
(c) $(-12) \div (+3)$	(d) $(-9) \div (+9)$
(e) $(-30) \div (+10)$	(f) $6 \div (-5)$
(g) $(-4) \div (-4)$	(h) $(-8) \div (+3)$
(i)	(j) $(+32) \div (-4)$

UASA PRACTICE

1. In the Math quiz, 3 marks are given for each correct answers and 1 mark is deducted for each wrong answer. If Ziyad answers 20 questions correctly and 10 questions incorrectly, what is the final score?
 - A. 30
 - B. 40
 - C. 50
 - D. 60

2. Calculate $10 + 25 \div 5 - 16$

3. The temperature in a room at night was 26°C . At midnight, the temperature fell by 12°C . What was the temperature of the room during midnight?

REFLECTION

Circle the emoji about how you understand this week's topic.

			
I got this!	I'm starting to get it.	I don't really get it.	I am so lost.

Today I've learnt _____

SET 3

1. Calculate each of the following.

Example:

$$\begin{aligned} & -9 + (+6) - (-8) \\ & = -9 + 6 + 8 \\ & = -3 + 8 \\ & = 5 \end{aligned}$$

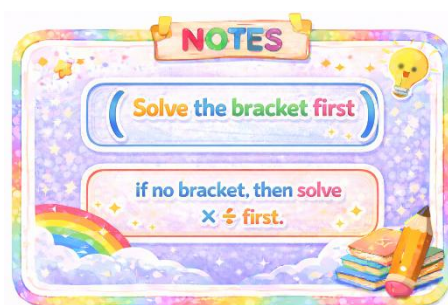


(a) $-8 + (+5) - (-2)$	(b) $8 + 3 - (-6)$
(c) $3 - (+5) + (-8)$	(d) $-6 + (+4) - (-7)$
(e) $9 - (-5) - (-4)$	(f) $4 + (-2) + (-1)$

2. Calculate each of the following.

Example:

$$\begin{aligned} & -4 + (-8) \times 7 \\ & = -4 + (-56) \\ & = -4 - 56 \\ & = -60 \end{aligned}$$



(a) $-3 + (-5) \times 2$	(b) $7 - 3 \times 4$
--------------------------	----------------------

(c) $8 - 20 \div 5$	(d) $-5 + 14 \div (-2)$
(e) $2 - 3(-4)$	(f) $-4 + 6(-5)$
(g) $-5 - 14 \div (-7)$	(h) $7 - 20 \div 2$

3. Calculate each of the following.

Example:

$$\begin{aligned}
 &7 \times (-8 + 5) \\
 &= 7 \times (-3) \\
 &= -21
 \end{aligned}$$



(a) $5 \times (-4 + 2)$	(b) $(-2 - 3) \times 4$
(c) $-18 \div (-5 + 2)$	(d) $(-16 + 8) \div 4$
(e) $-5 \times (-8 \div 4)$	(f) $-5 \times (-8 \div 4)$

4. Calculate each of the following.

Example:

$$\begin{aligned} 6 - 20 \div 4 + (-9) \\ = 6 - 5 - 9 \\ = 1 - 9 \\ = -8 \end{aligned}$$



(a) $-3 - 18 \div 3 + (-4)$	(b) $9 - 3 \times 3 - (+9)$
(c) $-7 + (-4) \times 2 - (-3)$	(d) $-4 - (-5) \times 3 - 7$
(e) $-9 - (-20) \div 5 + 6$	(f) $-4 - (-5) \times 3 - 7$

5. Calculate each of the following.

Example:

$$\begin{aligned} \frac{-12 + (-8)}{-19 + 15} \\ = \frac{-12 - 8}{-19 + 15} \\ = \frac{-20}{-4} \\ = 5 \end{aligned}$$



(a) $\frac{-10 + (-2)}{-4 + 2}$	(b) $\frac{-14 + (-4)}{-10 + 7}$
---------------------------------	----------------------------------

(c) $\frac{-20 - (-4)}{-5 - 3}$	(d) $\frac{6 - (-8)}{-2 - 5}$
(e) $\frac{-15 + (-3)}{-4 - (-10)}$	(f) $\frac{10 - (-5)}{-2 - 3}$

UASA PRACTICE

- Qarizh bought 4 bottles of water at the price of RM3 and 5 packs of bread at the price of RM1.50. He paid with RM20. How much change will Qarizh receive?
 - RM4
 - RM5
 - RM6
 - RM7
- Complete the operation steps below by filling in the blanks with the appropriate numbers.

$$\frac{-25 + (-17)}{-36 - (-43)} = \frac{-25}{-36} \frac{\boxed{}}{\boxed{}}$$

$$= \boxed{}$$

$$= \boxed{}$$

3. A tank contains 350 liters of water. Water is added to the tank at a rate of 15 liters per minute. There is water leaking out simultaneously at a rate of 5 liters per minute. Calculate the time, in minutes, required to fill the tank to 800 liters.

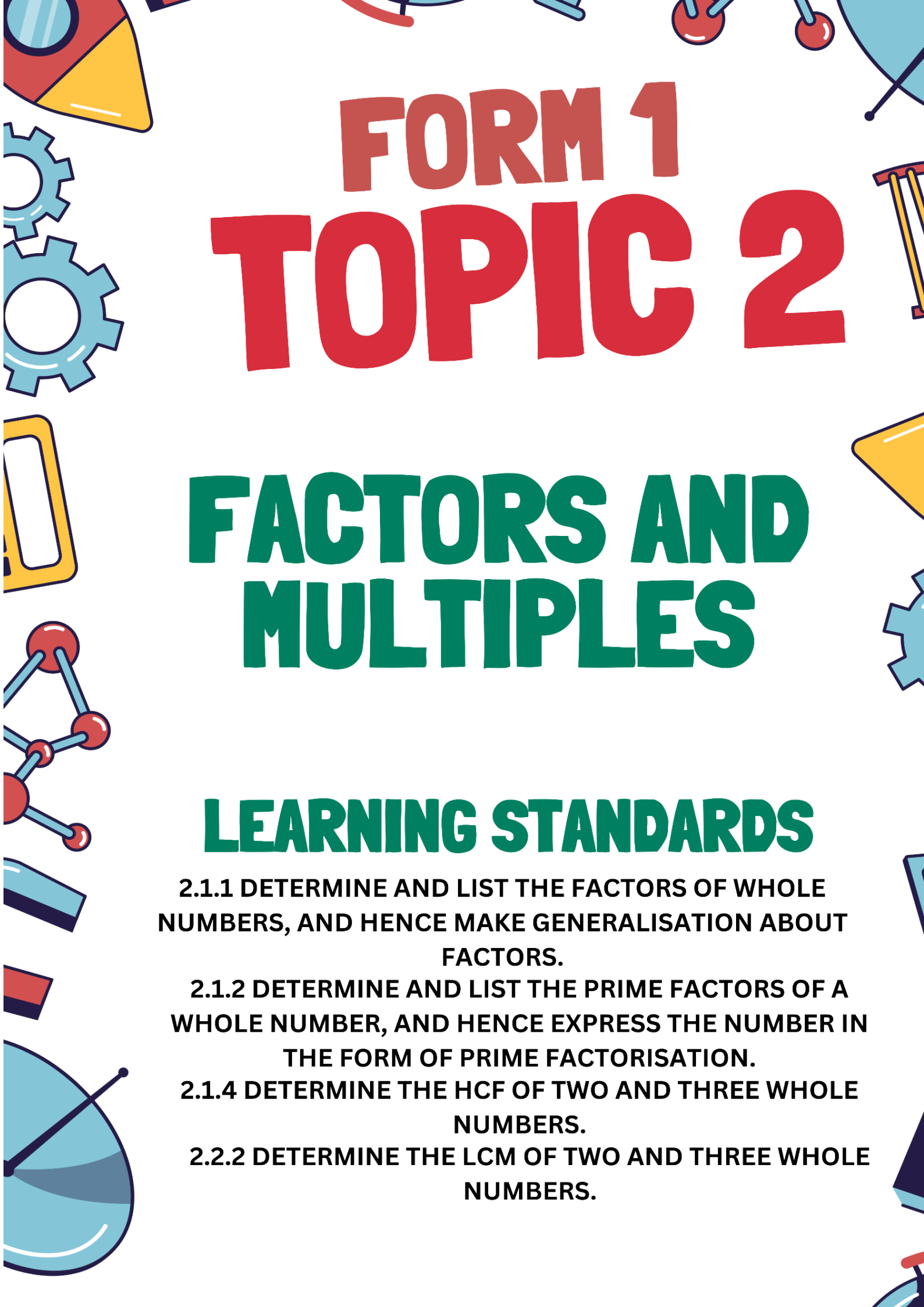
Type equation here.

REFLECTION

Circle the emoji about how you understand this week's topic.

			
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A decorative border surrounds the page, featuring various school-related icons: a rocket, gears, a pencil, a paper airplane, a satellite dish, a microscope, and a book.

FORM 1

TOPIC 2

FACTORS AND MULTIPLES

LEARNING STANDARDS

2.1.1 DETERMINE AND LIST THE FACTORS OF WHOLE NUMBERS, AND HENCE MAKE GENERALISATION ABOUT FACTORS.

2.1.2 DETERMINE AND LIST THE PRIME FACTORS OF A WHOLE NUMBER, AND HENCE EXPRESS THE NUMBER IN THE FORM OF PRIME FACTORISATION.

2.1.4 DETERMINE THE HCF OF TWO AND THREE WHOLE NUMBERS.

2.2.2 DETERMINE THE LCM OF TWO AND THREE WHOLE NUMBERS.

Factors and Multiples

Form 1 KSSM Mathematics

1. What are Factors?

Divisors that leave NO remainder!



Factors of 12 are:
1, 2, 3, 4, 6, 12

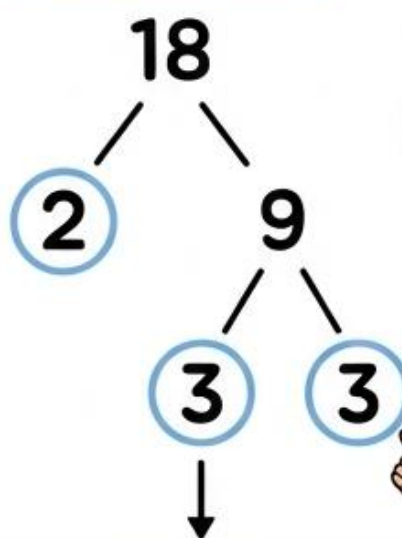
Generalisation:

A factor of a number 'n' is always less than or equal to 'n'. 1 is a factor of ALL numbers.

2. Prime Factors & Factorisation

Prime Numbers:
Only two factors (1 and itself).
e.g., 2, 3, 5, 7...

Factor Tree



Express as a PRODUCT of Prime Factors

$$18 = 2 \times 3 \times 3$$

Can we use a different tree?
Yes, the prime factors will be the same!

SET 4

1. Complete the factor pairs for each number.

Example: Factors of 18 $1 \times \underline{18} = 18$ $2 \times \underline{9} = 18$ $3 \times \underline{6} = 18$ Factors of 18 are 1, 2, 3, <u>6, 9, 18</u>	(a) Factors of 12 $1 \times \underline{\quad} = 12$ $2 \times \underline{\quad} = 12$ $3 \times \underline{\quad} = 12$ Factors of 12 are 1, 2, 3, <u> </u>
(b) Factors of 24 $1 \times \underline{\quad} = 24$ $2 \times \underline{\quad} = 24$ $3 \times \underline{\quad} = 24$ $4 \times \underline{\quad} = 24$ Factors of 24 are 1, 2, 3, 4, <u> </u>	(b) Factors of 30 $1 \times \underline{\quad} = 30$ $2 \times \underline{\quad} = 30$ $3 \times \underline{\quad} = 30$ $5 \times \underline{\quad} = 30$ Factors of 30 are 1, 2, 3, 5, <u> </u>

2. List all the factors of the numbers given.

Example:
Factors of 36

1

2

3

4

6

9

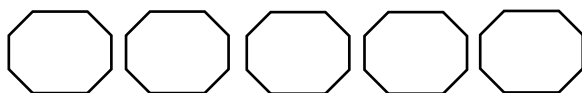
12

18

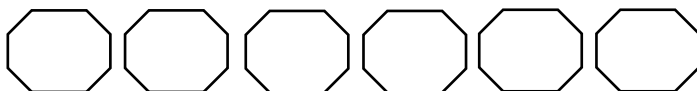
36

(a) Factors of 25

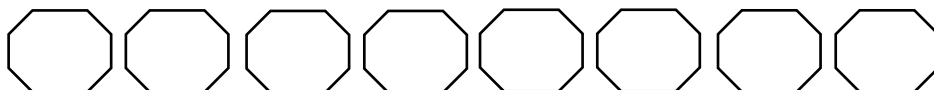
(b) Factors of 16



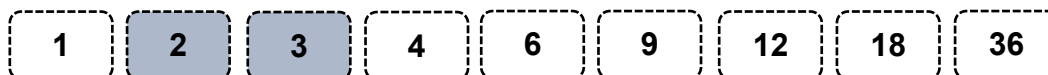
(c) Factors of 28



(d) Factors of 40



3. A Prime Number can only be divided by 1 and itself. 1 is NOT a prime number. Shade the prime factors in the list below.

Example: Prime factors of 36

(a) Prime factors of 33



(b) Prime factors of 45



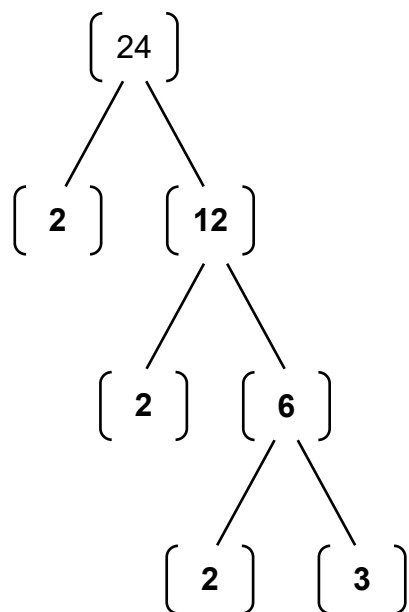
(c) Factors of 42



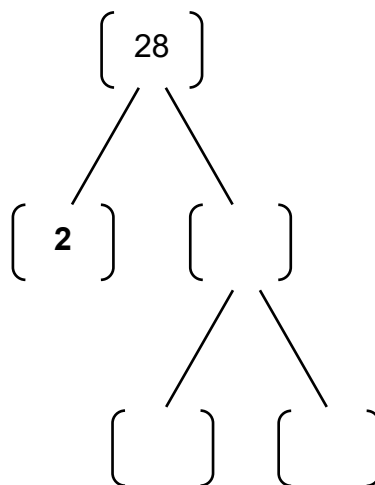
4. Complete the factor tree below.

Example:

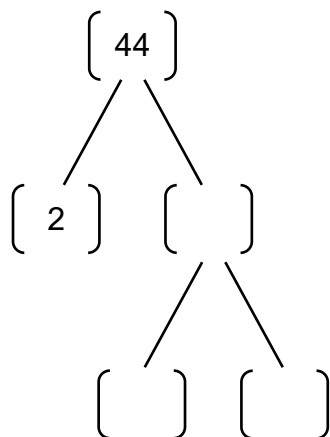
Factor tree for 24



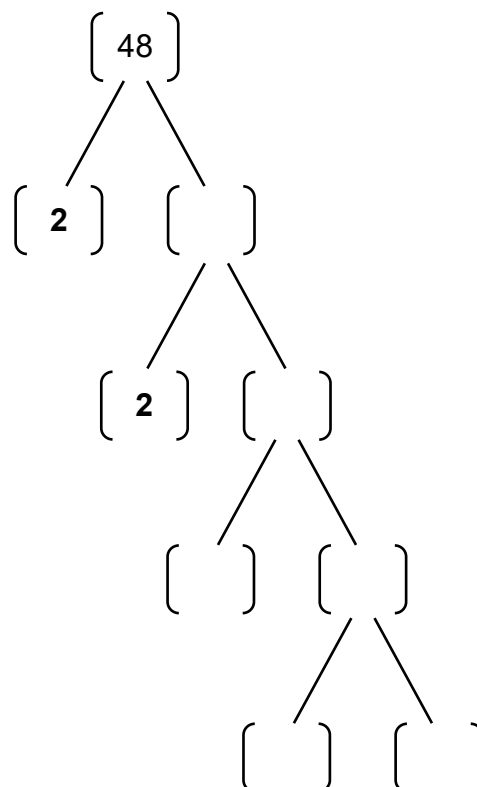
(a) Factor tree for 28



(b) Factor tree of 44



(c) Factor tree of 48



UASA PRACTICE

1. Which statement is TRUE about factors?
 - A. Every number has exactly 3 factors.
 - B. 1 is not a factor of any number.
 - C. A factor divides a number with no remainder.
 - D. A factor is always greater than the number.

2. How many factors does 10 have?

- | | |
|------|------|
| A. 2 | C. 4 |
| B. 3 | D. 5 |

3. Which number has factors 1, 2, 4, 8?

- | | |
|-------|-------|
| A. 18 | C. 12 |
| B. 16 | D. 8 |

4. List all the factors of 20 in ascending order.

--	--	--	--	--	--

5. Jessica says: "12 is a factor of 24, so 24 is a factor of 12."
State whether Jessica is Correct or Wrong and give a reason for your answer.

Correct / Wrong

Reason : _____

REFLECTION

Circle the emoji about how you understand this week's topic.

			
I got this!	I'm starting to get it.	I don't really get it.	I am so lost.

Today I've learnt _____

SET 5

1. Find the Highest Common Factor (HCF) of the two numbers.

Example:

HCF of 8 and 12.

Factors of 8	:	<u>1, 2, 4, 8</u>
Factors of 12	:	<u>1, 2, 3, 4, 6, 12</u>
Common factors	:	<u>1, 2, 4</u>
HCF	:	<u>4</u>

(a) HCF of 9 and 15.

Factors of 9 : _____

Factors of 15 : _____

Common factors : _____

HCF : _____

(b) HCF of 16 and 24.

Factors of 16 : _____

Factors of 24 : _____

Common factors : _____

HCF : _____

(c) HCF of 14 and 21.

Factors of 14 : _____

Factors of 21 : _____

Common factors : _____

HCF : _____

2. Find the Highest Common Factor (HCF) of the three numbers.

Example:

HCF of 4, 8, and 12.

Factors of 4	:	<u>1, 2, 4</u>
Factors of 8	:	<u>1, 2, 4, 8</u>
Factors of 12	:	<u>1, 2, 3, 4, 6, 12</u>
Common factors	:	<u>1, 2, 4</u>
HCF	:	<u>4</u>

(a) HCF of 9, 15 and 21.

Factors of 9	:	_____
Factors of 15	:	_____
Factors of 21	:	_____
Common factors	:	_____
HCF	:	_____

(b) HCF of 8, 16 and 32.

Factors of 8	:	_____
Factors of 16	:	_____
Factors of 32	:	_____
Common factors	:	_____
HCF	:	_____

(c) HCF of 10, 30 and 50.

Factors of 10	:	_____
Factors of 30	:	_____
Factors of 50	:	_____
Common factors	:	_____
HCF	:	_____

3. Find the Lowest Common Multiple (LCM) of the two numbers.

Example:

LCM of 3 and 4.

Multiples of 3	:	3, 6, 9, 12, 15, 18, 21, ...
Multiples of 4	:	4, 8, 12, ...
LCM	:	12

(a) LCM of 2 and 7.

Multiples of 2	:	_____
Multiples of 7	:	_____
LCM	:	_____

(b) LCM of 9 and 15.

Multiples of 9	:	_____
Multiples of 15	:	_____
LCM	:	_____

(c) LCM of 6 and 10.

Multiples of 6	:	_____
Multiples of 10	:	_____
LCM	:	_____

(d) LCM of 4 and 10

Multiples of 4	:	_____
Multiples of 10	:	_____
LCM	:	_____

(e) LCM of 8 and 12

Multiples of 6	:	_____
Multiples of 10	:	_____
LCM	:	_____

4. Find the Lowest Common Multiple (LCM) of the three numbers.

Example:

LCM of 3, 4 and 6

Multiples of 3	:	3, 6, 9, 12, 15, 18, 21, ...
Multiples of 4	:	4, 8, 12, ...
Multiples of 6	:	6, 12, ...
LCM	:	12

(a) LCM of 2, 4 and 5

Multiples of 2	:	
Multiples of 4	:	
Multiples of 5	:	
LCM	:	

(b) LCM of 3, 9 and 15

Multiples of 3	:	
Multiples of 9	:	
Multiples of 15	:	
LCM	:	

(c) LCM of 4, 6 and 12

Multiples of 4	:	
Multiples of 6	:	
Multiples of 12	:	
LCM	:	

5. Complete the table. Then, list the first three common multiples.

Example:

2 and 5

Multiples of 2: $\boxed{2}$ — $\boxed{4}$ — $\boxed{6}$ — $\boxed{8}$ — $\boxed{10}$, ...

Multiples of 5: $\boxed{5}$ — $\boxed{10}$, ...

First three multiples: $1 \times \boxed{10}$, $2 \times \boxed{10}$, $3 \times \boxed{10}$ = $\boxed{10}$, $\boxed{20}$, $\boxed{30}$

(a) 3 and 8

Multiples of 3: $\boxed{}$ — $\boxed{}$ — $\boxed{}$ — $\boxed{}$ — $\boxed{}$ — $\boxed{}$ — $\boxed{}$ — $\boxed{}$, ...

Multiples of 8: $\boxed{}$ — $\boxed{}$ — $\boxed{}$, ...

First three multiples: $1 \times \left(\right)$, $2 \times \left(\right)$, $3 \times \left(\right)$ = $\left(\right)$, $\left(\right)$, $\left(\right)$

(b) 4 and 7

Multiples of 4: $\boxed{}$ — $\boxed{}$ — $\boxed{}$ — $\boxed{}$ — $\boxed{}$ — $\boxed{}$ — $\boxed{}$, ...

Multiples of 7: $\boxed{}$ — $\boxed{}$ — $\boxed{}$ — $\boxed{}$, ...

First three multiples: $1 \times \left(\right)$, $2 \times \left(\right)$, $3 \times \left(\right)$ = $\left(\right)$, $\left(\right)$, $\left(\right)$

UASA PRACTICE

1. Find the highest common factor (HCF) of 12, 30, and 48.

- A. 12
- B. 6
- C. 4
- D. 2

2. Find the lowest common multiple (LCM) of 4, 5, and 8.

- A. 20
- B. 30
- C. 40
- D. 50

3. Fill in the blank and find the first three multiples of 6 and 9.

Multiples of 6: — — , ...

Multiples of 9: — , ...

First three multiples:

$1 \times (\quad)$, $2 \times (\quad)$, $3 \times (\quad) = (\quad)$, $(\quad)$, $(\quad)$

3. Answer the question below using the LCM method that you have learned.

A bus leaves Kuching Bus Station every 12 minutes.
A train leaves Kuching Train Station every 18 minutes.
At 8.00am, a bus and a train leave the stations at the same time.

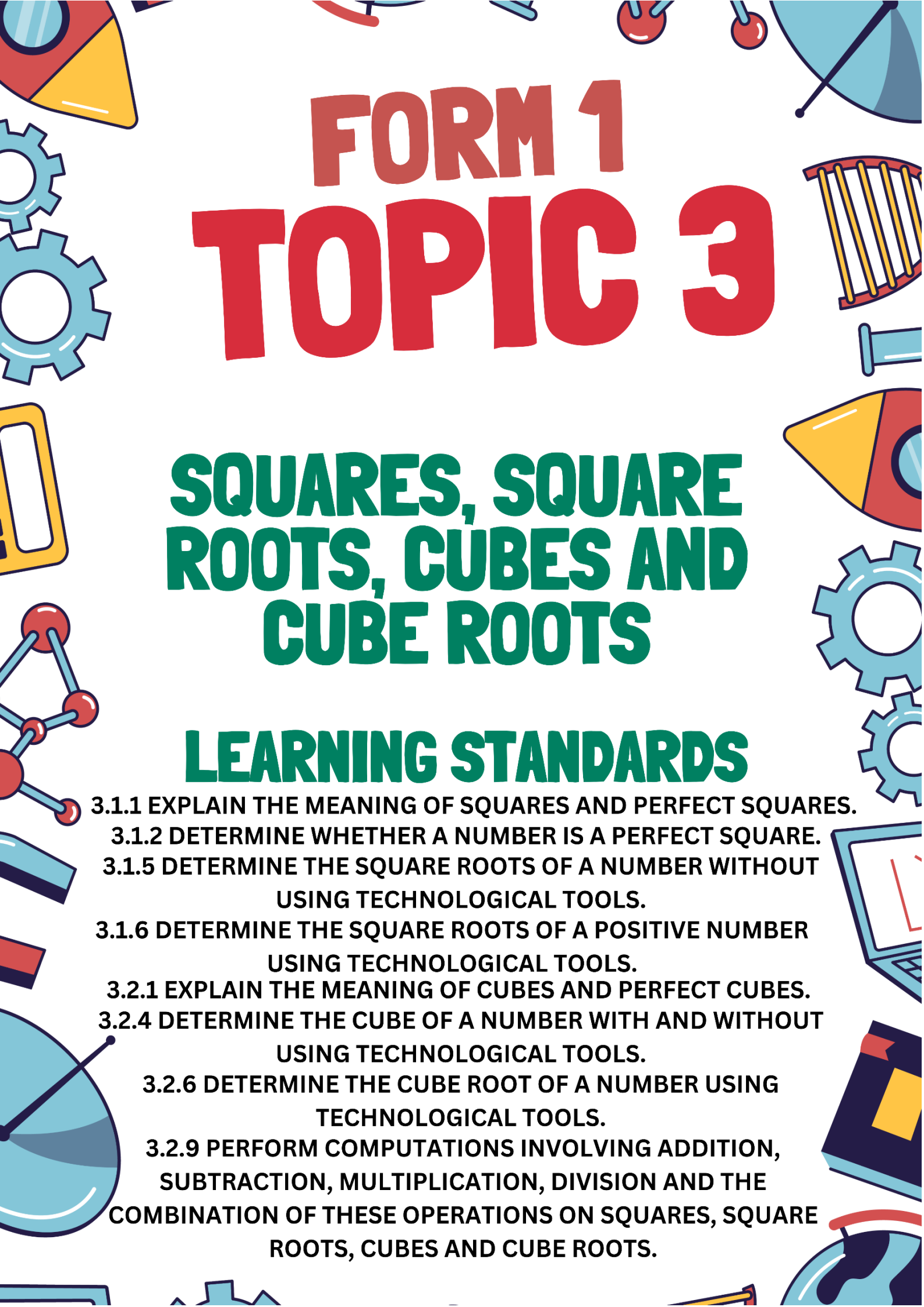
When is the next time that a bus and a train leave the stations at the same time?

REFLECTION

Circle the emoji about how you understand this week's topic.

			
I got this!	I'm starting to get it.	I don't really get it.	I am so lost.

Today I've learnt _____



FORM 1

TOPIC 3

SQUARES, SQUARE ROOTS, CUBES AND CUBE ROOTS

LEARNING STANDARDS

3.1.1 EXPLAIN THE MEANING OF SQUARES AND PERFECT SQUARES.

3.1.2 DETERMINE WHETHER A NUMBER IS A PERFECT SQUARE.

**3.1.5 DETERMINE THE SQUARE ROOTS OF A NUMBER WITHOUT
USING TECHNOLOGICAL TOOLS.**

**3.1.6 DETERMINE THE SQUARE ROOTS OF A POSITIVE NUMBER
USING TECHNOLOGICAL TOOLS.**

3.2.1 EXPLAIN THE MEANING OF CUBES AND PERFECT CUBES.

**3.2.4 DETERMINE THE CUBE OF A NUMBER WITH AND WITHOUT
USING TECHNOLOGICAL TOOLS.**

**3.2.6 DETERMINE THE CUBE ROOT OF A NUMBER USING
TECHNOLOGICAL TOOLS.**

**3.2.9 PERFORM COMPUTATIONS INVOLVING ADDITION,
SUBTRACTION, MULTIPLICATION, DIVISION AND THE
COMBINATION OF THESE OPERATIONS ON SQUARES, SQUARE
ROOTS, CUBES AND CUBE ROOTS.**

NOTES



Square

Repeated multiplication: $4 \times 4 = 4^2 = 16$

$$3^2$$

9

$$5^2$$

25

$$7^2$$

49

$$8^2$$

64

Perfect squares 9, 25, 49, 64 are perfect squares



Square Roots

Opposite of finding square: $\sqrt{25} = 5$

$$\sqrt{9} = 3$$

$$\sqrt{16} = 4$$

$$\sqrt{36} = 6$$

$$\sqrt{81} = 9$$

Perfect cubes 27, 64, 125 are perfect cubes



Cubes

Repeated multiplication: $2 \times 2 \times 2 = 2^3 = 8$

$$3^3$$

27

$$4^3$$

64

$$5^3$$

125

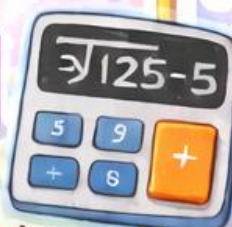
$$125$$

216

$$216$$

216

Perfect cubes 27, 64, 125, 216 are perfect cubes



Operations

$$5^2 + \sqrt{16} \times 3^3 + \sqrt{27} = 3$$

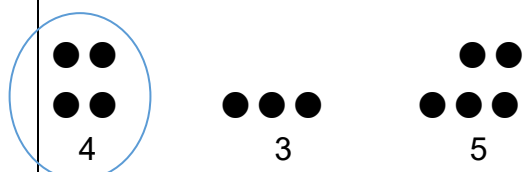
$$25 + 4 \times 27 \div 3 = 61$$



SET 6

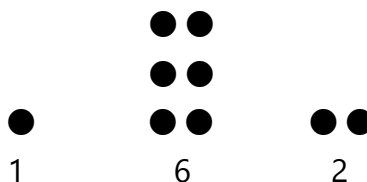
1. Explain the meaning of squares and perfect squares.

Example: Based on the following numbers below, circle the perfect squares:



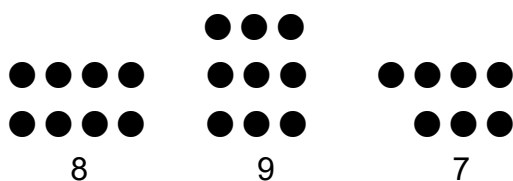
The answer is **4** because each side have same number of sides which is **2** circles for the length and **2** circles for the width.

(a) Circle the perfect squares:



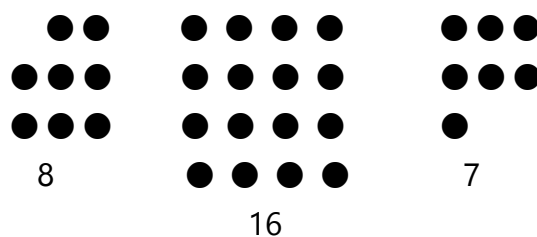
The answer is ___ because each side have same number of sides which is ___ circles for the length and ___ circles for the width.

(b) Circle the perfect square:



The answer is ___ because each side have same number of sides which is ___ circles for the length and ___ circles for the width.

(c) Circle the perfect square:



The answer is ___ because each side have same number of sides which is ___ circles for the length and ___ circles for the width.

2. Determine whether a number is a perfect square.

Example:

$$__ \times __ = 16$$

Is **16** a perfect square?

Yes / No

Answer: $4 \times 4 = 16$, Yes

(a)

$$__ \times __ = 25$$

Is **25** a perfect square?

Yes / No

Answer: $__ \times __ = 25$, $__$

(b) $\underline{\quad} \times \underline{\quad} = 36$ Is 36 a perfect square? Yes / No Answer: $\underline{\quad} \times \underline{\quad} = 36$, $\underline{\quad}$	(c) $\underline{\quad} \times \underline{\quad} = 49$ Is 49 a perfect square? Yes / No Answer: $\underline{\quad} \times \underline{\quad} = 49$, $\underline{\quad}$
(d) $\underline{\quad} \times \underline{\quad} = 9$ Is 9 a perfect square? Yes / No Answer: $\underline{\quad} \times \underline{\quad} = 9$, $\underline{\quad}$	(e) $\underline{\quad} \times \underline{\quad} = 81$ Is 81 a perfect square? Yes / No Answer: $\underline{\quad} \times \underline{\quad} = 81$, $\underline{\quad}$

3. Determine the square roots of a number without using technological tools.

Example: Without using calculator, estimate the value of $\sqrt{20}$ $4 \times 5 = 20$ Between <u>4</u> and <u>5</u>	(a) Without using calculator, estimate the value of $\sqrt{30}$ $\underline{\quad} \times \underline{\quad} = 30$ Between <u>5</u> and <u>6</u>
(b) Without using calculator, estimate the value of $\sqrt{42}$ $\underline{\quad} \times \underline{\quad} = 42$ Between <u>6</u> and <u>7</u>	(c) Without using calculator, estimate the value of $\sqrt{72}$ $\underline{\quad} \times \underline{\quad} = 72$ Between <u>8</u> and <u>9</u>

4. Determine the square roots of a positive number using technological tools.

Example: Find the value of $\sqrt{81}$ $= \sqrt{9 \times 9}$ $= 9$	(a) Find the value of $\sqrt{36}$
(b) Find the value of $\sqrt{49}$	(c) Find the value of $\sqrt{144}$
(d) Find the value of $\sqrt{4}$	(e) Find the value of $\sqrt{9}$
(f) Find the value of $\sqrt{16}$	(g) Find the value of $\sqrt{25}$
(h) Find the value of $\sqrt{64}$	(i) Find the value of $\sqrt{100}$

UASA PRACTICE

1. What is **perfect square**?
 - A. A number that can be divided by 2.
 - B. A number that can be arranged into a square shape.
 - C. A number that is very big.
 - D. A number with decimals.

2. Mark (/) for the perfect square and (x) for non-perfect square.

27		64	
49		99	

3. George has a piece of land in the shape of square. He wants to fence around his land. How long the fence should he buy if the land is 144 m^2 .

REFLECTION

Circle the emoji about how you understand this week's topic.

			
I got this!	I'm starting to get it.	I don't really get it.	I am so lost.

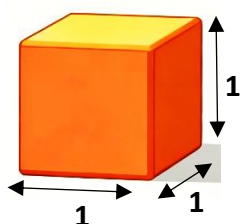
Today I've learnt _____

SET 7

1. Based on the diagram, fill in the boxes with the cube of each number shown in the form of repeated multiplication.

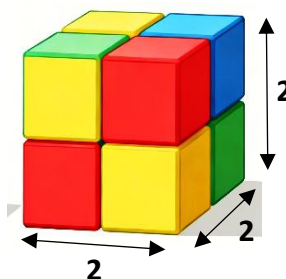
Example:

Based on the diagram, fill in the boxes with the cube of each number shown in the form of repeated multiplication.



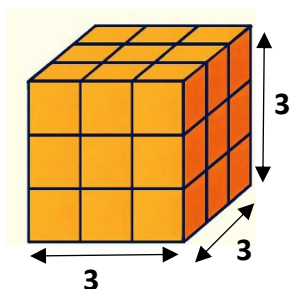
$$\boxed{1}^3 = \boxed{1} \times \boxed{1} \times \boxed{1}$$

Based on the diagram, fill in the boxes with the cube of each number shown in the form of repeated multiplication.



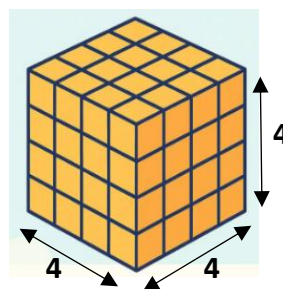
$$\boxed{}^3 = \boxed{} \times \boxed{} \times \boxed{}$$

Based on the diagram, fill in the boxes with the cube of each number shown in the form of repeated multiplication.



$$\boxed{}^3 = \boxed{} \times \boxed{} \times \boxed{}$$

Based on the diagram, fill in the boxes with the cube of each number shown in the form of repeated multiplication.

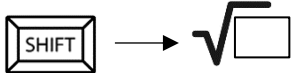


$$\boxed{}^3 = \boxed{} \times \boxed{} \times \boxed{}$$

2. Determine the cube of a number with and without using technological tools.

Example: Find the value of 2^3 $2^3 = 2 \times 2 \times 2$ $= 8$	(a) Find the value of 3^3 $3^3 = _ \times _ \times _$ $= _$
(b) Find the value of 5^3 $5^3 = _ \times _ \times _$ $= _$	(c) Find the value of 6^3 $6^3 = _ \times _ \times _$ $= _$

3. Determine the cube root of a number using technological tools.

Example:  $\sqrt[3]{8}$ 2	(a) $\sqrt[3]{27}$
(b) $\sqrt[3]{64}$	(c) $\sqrt[3]{(-125)}$

4. Perform computations involving the combination of the operations on squares, square roots, cubes and cube roots.

Example: Calculate: $\sqrt[3]{49} + 2^3$ Answer: Step 1: $\sqrt[3]{49} = 3.65930571 \approx 3.66$ Step 2: $2^3 = 8$ Step 3: $3.66 + 8 = 11.66$	(a) Calculate: $\sqrt{9} + 2^2$ Step 1: Step 2: Step 3:
---	--

(b) Calculate: $3^3 + \sqrt{25}$ Step 1: Step 2: Step 3:	(c) Calculate: $\sqrt[3]{216} + 1^3$ Step 1: Step 2: Step 3:
(d) Calculate: $3^3 - \sqrt{16}$ Step 1: Step 2: Step 3:	(e) Calculate: $\sqrt{81} - 3^2$ Step 1: Step 2: Step 3:
(f) Calculate: $\sqrt[3]{343} - 4^2$ Step 1: Step 2: Step 3:	(g) Calculate: $2^3 - \sqrt{100}$ Step 1: Step 2: Step 3:
(h) Calculate: $\sqrt[3]{125} \times \sqrt{16} \div 2$ Step 1: Step 2: Step 3: Step 4:	(i) Calculate: $6^3 \div \sqrt[3]{512} \times 3$ Step 1: Step 2: Step 3: Step 4:

UASA PRACTICE

1. What is the cube root of **27**?

- A. 27
- B. 9
- C. 8
- D. 3

2. Match the correct answers.

$$\sqrt[3]{64}$$

8

$$2^3$$

4

3.



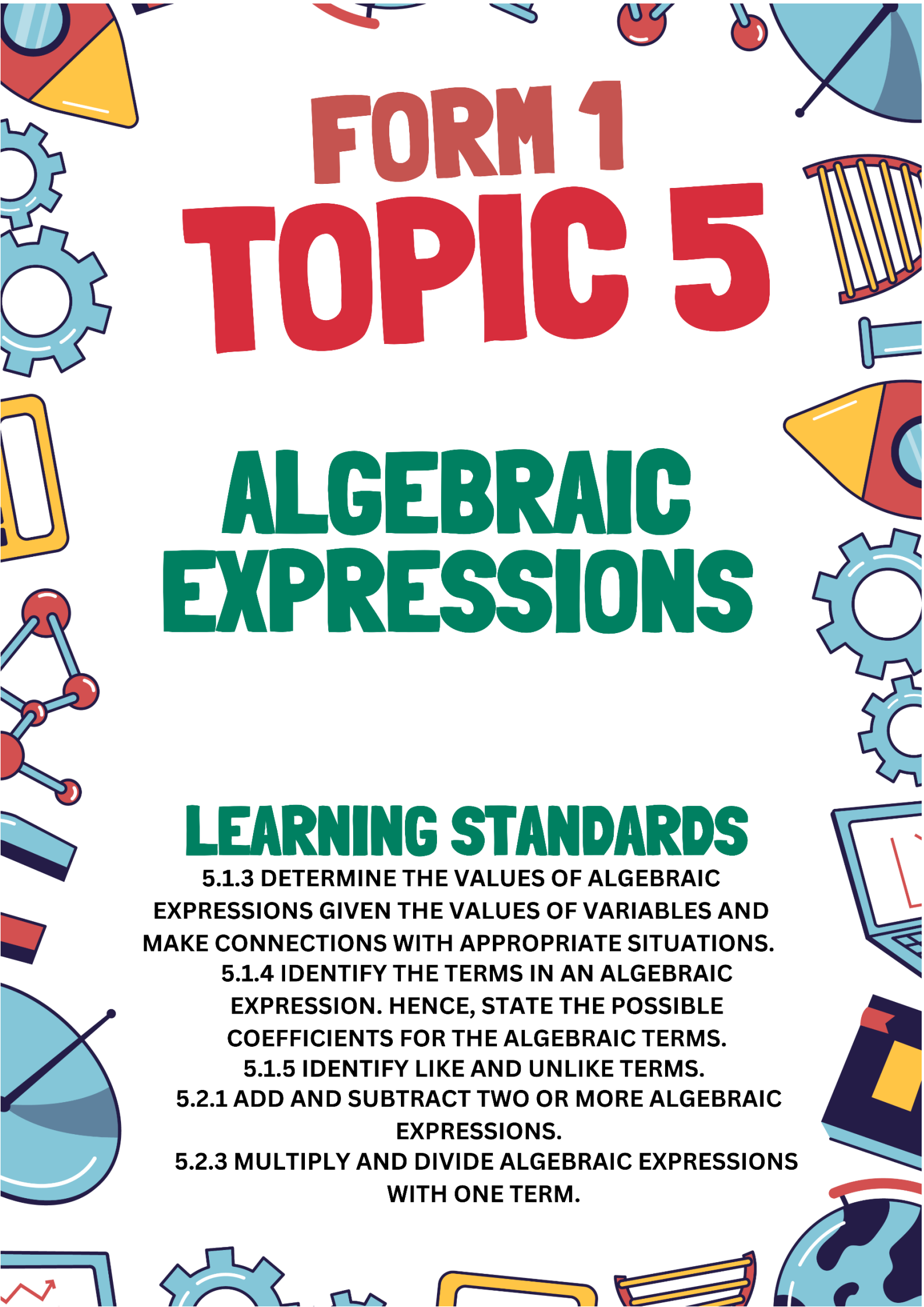
Alice wrapped the box using decorative paper. She uses 216 cm^3 of decorative paper. Find the value of x .

REFLECTION

Circle the emoji about how you understand this week's topic.

			
I got this!	I'm starting to get it.	I don't really get it.	I am so lost.

Today I've learnt _____



FORM 1

TOPIC 5

ALGEBRAIC EXPRESSIONS

LEARNING STANDARDS

5.1.3 DETERMINE THE VALUES OF ALGEBRAIC EXPRESSIONS GIVEN THE VALUES OF VARIABLES AND MAKE CONNECTIONS WITH APPROPRIATE SITUATIONS.

5.1.4 IDENTIFY THE TERMS IN AN ALGEBRAIC EXPRESSION. HENCE, STATE THE POSSIBLE COEFFICIENTS FOR THE ALGEBRAIC TERMS.

5.1.5 IDENTIFY LIKE AND UNLIKE TERMS.

5.2.1 ADD AND SUBTRACT TWO OR MORE ALGEBRAIC EXPRESSIONS.

5.2.3 MULTIPLY AND DIVIDE ALGEBRAIC EXPRESSIONS WITH ONE TERM.

CHAPTER 5: ALGEBRAIC EXPRESSIONS

TERMS, COEFFICIENTS & VALUES

5.1.3 FIND THE VALUE (SUBSTITUTE & SOLVE!)

Area = $l \times w$

Let $l = 5, w = 3$

Area = 15 sq units!

Area = $5 \times 3 = 15$

5.1.4 IDENTIFY TERMS & COEFFICIENTS

$4x - 7y + 2$

TERM 1: $4x$
Coefficient of x : 4

TERM 2: $-7y$
Coefficient of y : -7

TERM 3 (Constant): $+2$

5.1.5 LIKE vs. UNLIKE TERMS

We belong together! (All have 'a')

LIKE TERMS (Same Variable!)

UNLIKE TERMS (Different Variables)

We are all different...

Remember: Like terms have the EXACT same variable part!

SET 8

Example:

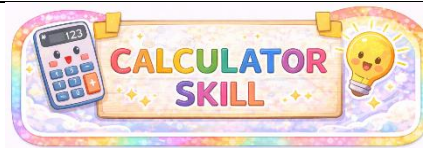
If $x = 2$ and $y = -1$

find the value of $7x + 3y - 9$.

$$7(2) + 3(-1) - 9$$

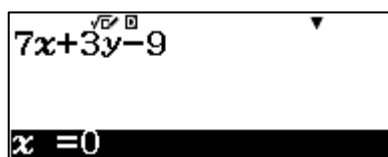
$$= 14 - 3 - 9$$

$$= 2$$

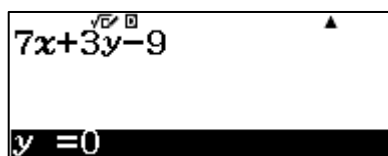


*Based on Casio FX-570EX Classwiz Calculator

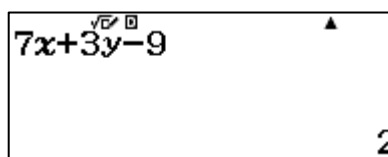
1. $\boxed{7} \boxed{\text{ALPHA}} \boxed{\text{X}} \boxed{+} \boxed{3} \boxed{\text{ALPHA}} \boxed{\text{Y}} \boxed{-} \boxed{9} \boxed{\text{CALC}}$



2. $\boxed{2} \boxed{=}$



3. $\boxed{=} \boxed{1} \boxed{=}$



(a) If $x = -1$ and $y = 2$,
find the value of $2x - y + 7$.

(b) If $x = 1$ and $y = 4$,
find the value of $5x + y - 4$.

(c) If $x = -3$ and $y = -6$
find the value of $4x - y + 1$.

(d) If $x = -5$ and $y = -8$
find the value of $4x - y + 1$.

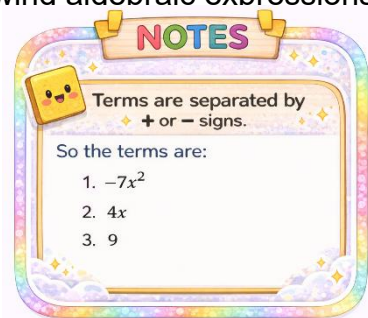
2. List all the terms for each of the following algebraic expressions.

Example:

Expression:

$$-7x^2 + 4x + 9$$

Algebraic terms are $7x^2$, $4x$ and 9 .



(a) $5y + 2$	(b) $3a^2 + 6a + 1$
(c) $-8m + 4n + 10$	(d) $9rs - 5t + 2tu$

3. Complete the table by stating the possible coefficients for the following algebraic term.

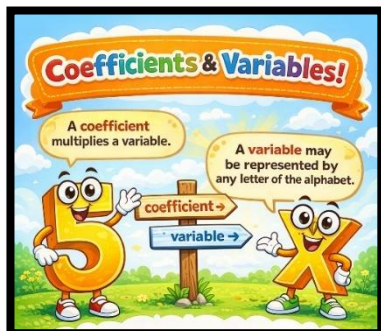
Example:

In the term $-6a^2bc$, state the coefficient of

(a) a^2b

(b) $6a^2c$

(c) $-bc$



(a) $-6a^2bc = -6c \times a^2b$

The coefficient of a^2b is $-6c$.

(b) $-6a^2bc = -b \times 6a^2c$

The coefficient of $6a^2c$ is $-b$.

(c) $-6a^2bc = 6a^2 \times -bc$

The coefficient of $-bc$ is $6a^2$.

(a)

Algebraic term	Variable	Coefficient
$3mn^2$	$3m$	
	n	
	$3n^2$	
	3	

(b)

Algebraic term	Variable	Coefficient
$-5rs^2t$	$-5r$	
	rs^2	
	$-st$	
	$-5rt$	

4. Identify Like Terms and Unlike Terms.

Example:

$6x, -3x, 4y, 10$

Like terms:

$6x$ and $-3x$

Unlike terms:

$4y$ (different variable)

10 (constant, no variable)



(a) $3m^2, -6m, 9m^2, 4$	(b) $-5x, 2y, 7x, -y, 3$
--------------------------	--------------------------

UASA PRACTICE

- If $x = 4$, find the value of $3x + 5$
 - 7
 - 12
 - 17
 - 20
- Which of the following is the coefficient of $-6a$?
 - 6
 - 6
 - a
 - $-a$
- Which pair are like terms?
 - $4x$ and $4y$
 - $3m$ and $3m^2$
 - $5p$ and $-2p$
 - $7a$ and 7

4. Match each algebraic term in Column A with the correct description in Column B.

Column A
$8x$
$-3y^2$
5
$2y$

Column B
Constant
Coefficient is -3
Coefficient is 8
Variable is y

5. Given the expression:

$$-5a + 2b + 3a + 7$$

- List all the terms.
- State the coefficients of the algebraic terms.
- Identify one pair of like terms.
- If $a = 2$ and $b = -3$, calculate the value of the expression.

REFLECTION

Circle the emoji about how you understand this week's topic.

			
I got this!	I'm starting to get it.	I don't really get it.	I am so lost.

Today I've learnt _____

CHAPTER 5: ALGEBRAIC EXPRESSIONS

FRIENDLY SCHOOL MATH!

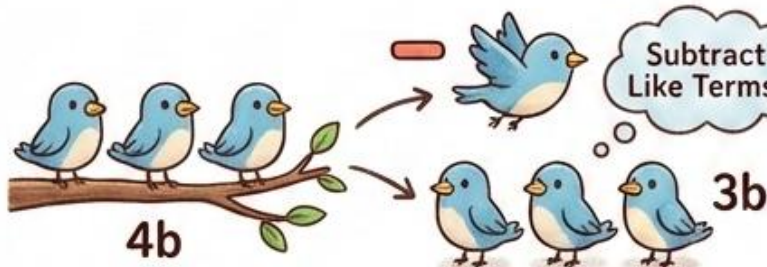
5.2.1 ADD & SUBTRACT (LIKE TERMS!)



Combine
Like Terms!
(Same Variable)

$$(3x + 2y) + (x - y)$$

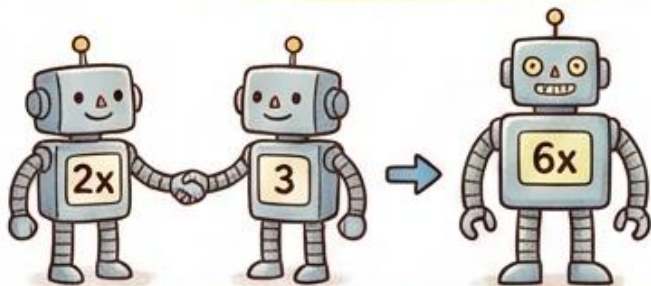
$$(3x + x) + (2y - y) = 4x + y$$



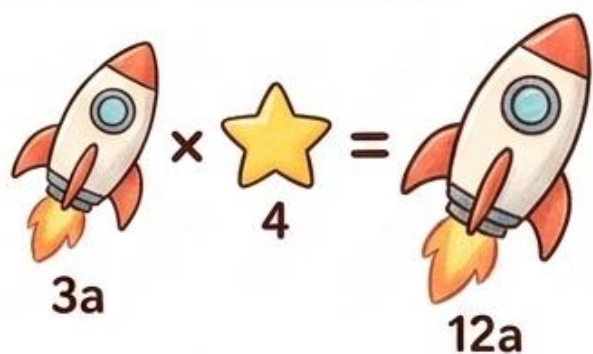
Subtract
Like Terms!



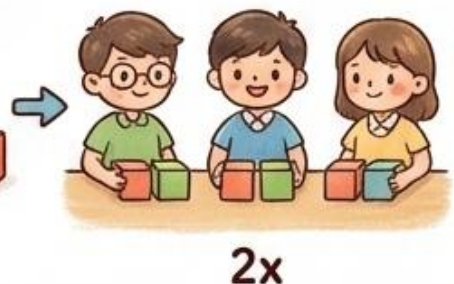
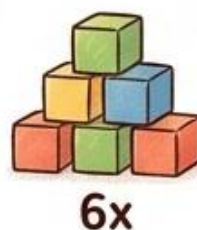
5.2.3 MULTIPLY & DIVIDE (ONE TERM)



MULTIPLY: Multiply Numbers, Keep Variable



DIVIDE: Divide Numbers, Keep Variable



SET 9

1. Simplify the following algebraic expressions.

Example: $3x^5 + 5x^5$ $3x^5 + 5x^5 = (5 + 3)x^5$ $= 8x^5$	(a) $12a^5 + 7a^5$
(b) $20k^4 + 7k^4$	(c) $5m^3 + 24m^3$

2. Simplify the following algebraic expressions.

Example: $4x^2 - 3x^2$ $4x^2 - 3x^2 = (4 - 3)x^2$ $= 1x^2$	(a) $7n^5 - 12n^5$
(b) $15p^2 - 9p^2$	(c) $22d^3 - 6d^3$

3. Simplify the following algebraic expressions.

Example: $12 - 4k + 5 - 9k$ Group like terms: $12 + 5 - 4k - 9k$ $= 17 - 13k$	(a) $5x - 3y + 2x + 7y$
--	-------------------------

(b) $8m^2 + 4m - 2m^2 - 9m$	(c) $(6a + 2b) - (4a - 5b)$
-----------------------------	-----------------------------

4. Simplify the following algebraic expressions.

Example: $3p^2 \times 4p^5$ $3 \times 4 \times p^{2+5} = 12p^7$	(a) $4m \times 5m^3$
(b) $-2x^2y \times 7xy^3$	(c) $3a^2 \times 2ab \times 4b^2$

5. Simplify the following algebraic expressions.

Example: $15x^4y^2 \div 3x^2y$ $15 \div 3 \times x^{4-2}y^{2-1}$ $= 5x^2y^1$	(a) $-25p^4q^2 \div 5p^2q$
(b) $18k^5 \div 3k^2$	(c) $\frac{12x^5y^3z}{4xy^3}$

6. Simplify the following algebraic expressions.

Example:

$$\frac{6ab \times 2a^2}{4a}$$

$$\frac{6 \times 2}{4} \times \frac{a \times a \times a}{a} \times \frac{b}{1}$$

$$= 3a^2b$$

(a) $\frac{15a^2b \times 4b^3}{10ab}$	(b) $\frac{8m^3 \times (-3n^2)}{6mn}$
--	--

UASA PRACTICE

1. Simplify the following expression: $3x - 5y + 2x + 9y$.

- A. $5x + 4y$
- B. $x + 4y$
- C. $5x - 14y$
- D. $5x - 4y$

2. Calculate the product: $4m^2n \times 5n^3$.

- A. $20mn^4$
- B. $20m^2n^4$
- C. $20m^2n^3$
- D. $9m^2n^4$

3. State whether the statements are TRUE or FALSE.

a)	$3x + 4y - x = 2x + 4y$	
b)	$6p - (-2p + 1) = 4p - 1$	
c)	$4m \times 3m = 12m^2$	
d)	$10ab \div 2a = 5ab$	

3. Simplify the following:

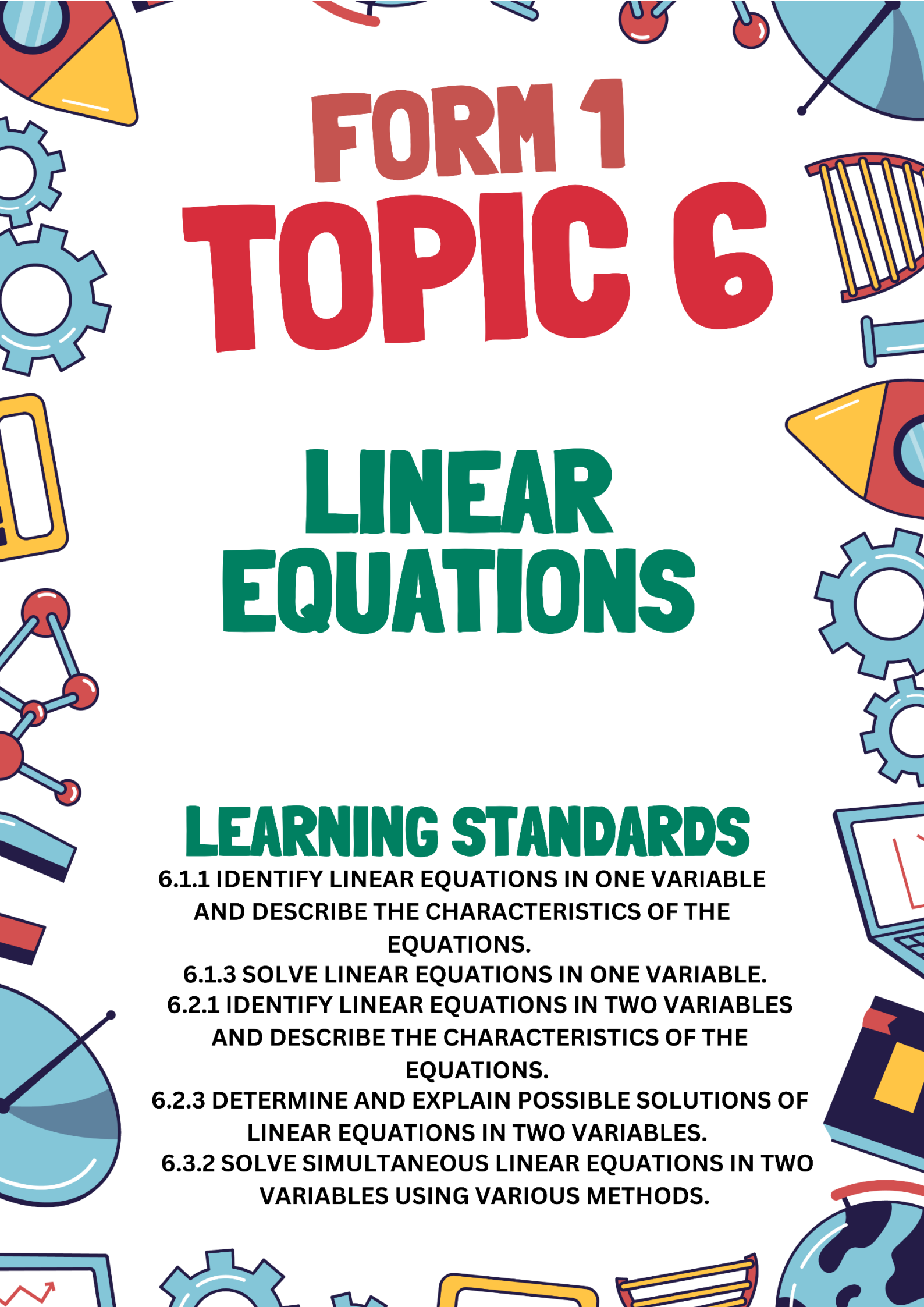
$$\frac{12m^2n}{4m}$$

REFLECTION

Circle the emoji about how you understand this week's topic.

			
I got this!	I'm starting to get it.	I don't really get it.	I am so lost.

Today I've learnt _____



FORM 1

TOPIC 6

LINEAR EQUATIONS

LEARNING STANDARDS

6.1.1 IDENTIFY LINEAR EQUATIONS IN ONE VARIABLE AND DESCRIBE THE CHARACTERISTICS OF THE EQUATIONS.

6.1.3 SOLVE LINEAR EQUATIONS IN ONE VARIABLE.

6.2.1 IDENTIFY LINEAR EQUATIONS IN TWO VARIABLES AND DESCRIBE THE CHARACTERISTICS OF THE EQUATIONS.

6.2.3 DETERMINE AND EXPLAIN POSSIBLE SOLUTIONS OF LINEAR EQUATIONS IN TWO VARIABLES.

6.3.2 SOLVE SIMULTANEOUS LINEAR EQUATIONS IN TWO VARIABLES USING VARIOUS METHODS.



ALGEBRA



Evaluating Algebraic Expressions

Evaluate $3x - 2y$ if $x = 4$ and $y = 5$.

$$3x - 2y \rightarrow 3(4) - 2(5) \rightarrow 12 - 10 = 2$$



Identifying Terms & Coefficients

Terms are separated by $+$ or $-$ signs.

$$-7x^2 + 4x - 9 \rightarrow -7x^2 \rightarrow -7 \quad \text{coefficient: } -7$$

$$\rightarrow 4x \rightarrow 4 \quad \text{coefficient: } 4$$

$$\rightarrow 9 \rightarrow \quad \text{constant term}$$

Like & Unlike Terms

Like terms

$$2x \text{ and } -5x \rightarrow 3ab^2 \text{ and } -ab^2$$

Unlike terms

$$3m^2 \text{ and } 7pq \rightarrow 4y \text{ and } 2x^2$$

Multiplication & Division

$$6x^3 \times 2x^2 = 12x^5$$

$$6 \times 2 \times x^3 \times x^2 = 12x^5$$

$$9a^2 + 3a = 3a$$

$$(9-3)(a^2-a) = 3a$$



SET 10

1. Identify and circle the linear equations in one variable.

Example:

$2x + 3$	$-4y + 3 = 0$
$m^2 - 6m = 4$	$-7 + 4k = k$
$2s - 1 = 4s + 2$	$9x + y = 2$
$pq = 2$	$3 - 7p = 8$

a)

$y = 4x - 9$	$a - 2 = 7a + 2$
$9w = 9$	$p - 1 = 10p$
$xy = 21$	$h + 2 = h^2$
$8x + x = 2$	$-2p + 7q = 0$

b)

$7s^2 - 1 = 7s$	$-6t + 7 = 8$
$-5q - q = q + 2$	$9v - 2u = 5$
$8u - 6 = 2$	$6r - 2s = t$
$mn - m = 9$	$f = 2f + 1$

c)

$x - 2x = -1$	$h - h^3 = 0$
$2w - u = -7$	$2b + b = 3$
$-4y - 7 = -21$	$5t - tk = 2$
$k^2 - 2k + 1$	$9z - 2 = 0$

2. Solve linear equations in one variable.

Example:

$$9x - 3 = 87$$

Method 1: Backtracking method

Forward track	Backtrack
$9 \times x$	$87 + 3 = 90$
Subtract 3	$90 \div 9 = 10$
Equals 87	$x = 10$

a) $2x + 6 = 22$

Forward track	Backtrack

b) $4x - 30 = 14$

Forward track	Backtrack

c) $5x + 25 = 5$

Forward track	Backtrack

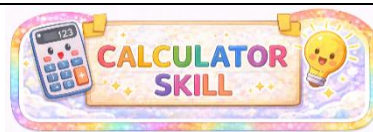
3. Solve the linear equation.

Example:

Solve the linear equation:

$$\frac{3-6k}{3} = 5$$

$\frac{3-6k}{3} [\times 3] = 5[\times 3]$	Multiply 3 both sides
$3-6k-3 = 15-3$	Subtract 3 both sides
$\frac{-6k}{-6} = \frac{12}{-6}$	Divide (-6) both sides
$k = 2$	Solution



*Based on Casio FX-570EX Classwiz Calculator



$$\frac{3-6x}{3} = 5$$

$$x = 2$$

The solution for linear equation is

$$k = 2$$

(a) $\frac{-3x+8}{4} = 20$

(b) $\frac{4x-1}{5} = 7$

b) $\frac{3x-4}{7} = 5$

c) $\frac{-7x+7}{9} = 7$

UASA PRACTICE

1. Match the linear equations with their solutions.

(a)	$-2x + 2 = -62$	-1
(b)	$\frac{3x - 10}{7} - 7 = -5$	1
(c)	$5x + 7.5 = 12.5$	32
(d)	$6x + \frac{9}{8} = 4x - \frac{7}{8}$	8

2. Circle the linear equations that has the solution -2 .

$4x = 8$

$9m + 12 = -12$

$-6 + 7y = 8$

$8h + 2 = -10$

$-9 + 9n = -27$

$-5r - 30 = -20$

$-4u + 20 = 28$

$-3k - 5 = 1$

$3w + 3 = 12$

REFLECTION

Circle the emoji about how you understand this week's topic.

			
I got this!	I'm starting to get it.	I don't really get it.	I am so lost.

Today I've learnt _____

SET 11

1. Identify and circle linear equations in two variables.

Example:

$-7y + x = 91$	$yx = 21$
$4x^2 + y = 22$	$-6(3 + 4p) = 5q$
$\frac{x}{8} - 3y = -14$	$\frac{x}{8} - \frac{3}{y} = -14$

a)

$-7y^2 - 2x = 8$	$a + b = 2$
$5t - s = -14$	$7(2u - 5) = 6$
$\frac{2h}{3} - 4k = -15$	$w + \frac{9}{q} = 41$

b)

$5m - n = -60$	$-p + 2q = 30$
$q^2 = 22p$	$6(3 + 5s) = -4$
$r - 3 = -14$	$z - 7y = 9$

c)

$-c + de = 9$	$rs + 2 = 30$
$w + k = 61 - w$	$-(9t + u) = -1$
$s + 2t = -14s$	$p^2 - 7y^3 = 34$

2. Circle three possible pairs of solutions for the linear equations.

Example: $9x + 7y = -16$

$(-5, 4)$	$(-9, 5)$
$(4, -5)$	$(5, -9)$
$(-1, -1)$	$(1, 1)$

a) $2x + 2y = 20$

$(-2, 4)$	$(4, 6)$
$(2, 4)$	$(-4, -6)$
$(7, 3)$	$(-7, 3)$

b) $7x - 6y = 21$

$(0, 3)$	$(7, 9)$
$(9, 7)$	$(-3, -7)$
$(-7, -3)$	$(3, 0)$

c) $4x - 5y = 8$

$(-3, -4)$	$(2, 0)$
$(0, 2)$	$(4, 7)$
$(7, 4)$	$(-4, 3)$

UASA PRACTICE

1. Mark $\checkmark$ for linear equations in two variables or $\times$ if they are not linear equations in two variables.

(a)	$-3q + 2 = p$	
(b)	$\frac{4}{x} - y = -3$	

(c)	$5m^2 - n = 0$	
(d)	$7a - 6b = -\frac{2}{3}$	

2. The following pairs of values of x and y satisfy the equation $4y - 3x = 12$. State **true** for the pairs that satisfy the equations and **false** for the pairs that do not satisfy the equations.

(a)	$x = 0, y = 3$	
(b)	$x = -4, y = 0$	

(c)	$x = 3, y = 2$	
(d)	$x = 4, y = 6$	

3. Complete the following table below that satisfy the linear equations given.

	Linear Equation	Value of x	Value of y
(a)	$-4x + 7y = -14$		-2
(b)	$9x + 2y = 63$	3	
(c)	$5x - 8y + 21 = 0$	-1	
(d)	$3x + 9 - 2y = 6$		6

REFLECTION

Circle the emoji about how you understand this week's topic.

			
I got this!	I'm starting to get it.	I don't really get it.	I am so lost.

Today I've learnt _____

SET 12

1. Solve these two linear equations in two variables simultaneously by **substitution** method.

Example:

$$x + y = 5$$

$$x - y = -1$$

$$x + y = 5$$

$$x = 5 - y$$

$$x - y = -1$$

$$5 - y - y = -1$$

$$-2y = -6$$

$$y = 3$$

$$x = 5 - 3$$

$$x = 2$$

$$x = 2, y = 3$$

Make y as a subject of formulae from equation (1) and make it as equation (3)
Equation 3 -----(3)

Substitute (3) into (2) by replacing x with $5 - y$

Use equality concept to solve for y

Substitute value of y in (3)

Write the solution in pairs.

(a)

$$k + p = 8$$

$$k - p = 2$$

b)

$$x - 2y = -8$$

$$x + y = -2$$

c)

$$2a + b = 4$$

$$a - b = -1$$

2. Solve these two linear equations in two variables simultaneously by **elimination** method.

Example:

$$x + y = 12$$

$$x - y = -2$$

$$x + y = 12$$

$$x - y = -2$$

With this pair of simultaneous equations notice that the coefficients of x and y matched. Can choose any variable to eliminate.

$$2x = 10$$

$$x = 5$$

Add (1) and (2) to eliminate y .

Solve for x

$$x + y = 12$$

$$5 + y = 12$$

$$y = 7$$

$$x = 5, y = 7$$

Substitute value of x in (1).

Solve for y .

Write the solution in pairs.

(a)

$$r - s = 10$$

$$r + s = 30$$

b)

$$2p + 3q = 4$$

$$2p - q = -4$$

c)

$$6x - 5y = 9$$

$$2x + 5y = 23$$

UASA PRACTICE

1. Solve the simultaneous linear equation by **substitution** method.

$$3x + y = 6 \text{ -----(1)}$$

$$9x + 2y = 3 \text{ -----(2)}$$

2. Solve the simultaneous linear equation by **substitution** method.

$$3x - 2y = 29 \text{ -----(1)}$$

$$4x + y = 24 \text{ -----(2)}$$

3. Solve the simultaneous linear equation by **elimination** method.

$$4x - y = 16$$

$$6x - y = 26$$

4. Solve the simultaneous linear equation by **elimination** method.

$$x + y = 10$$

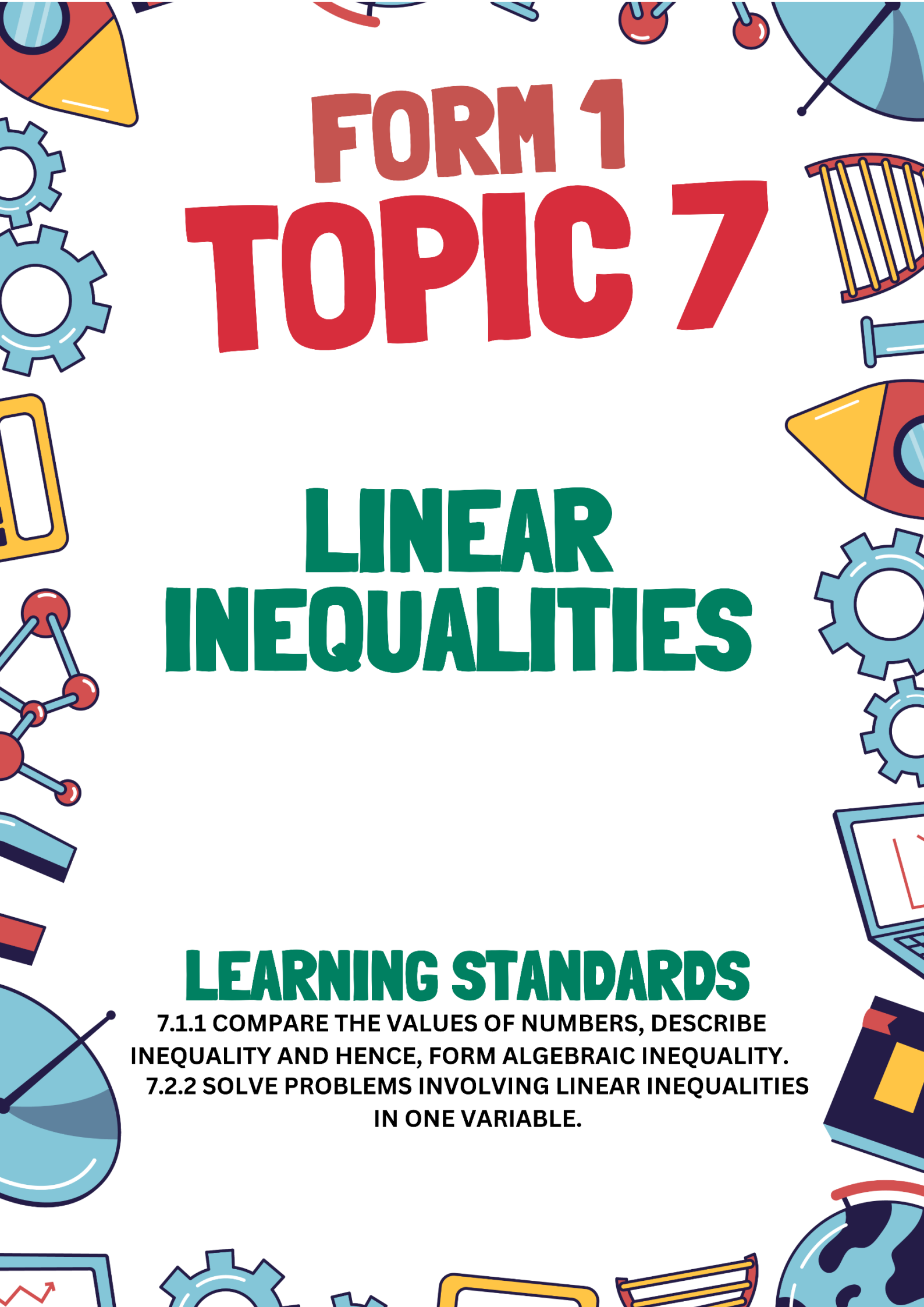
$$3x + 5y = 40$$

REFLECTION

Circle the emoji about how you understand this week's topic.

			
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Today I've learnt _____



FORM 1 TOPIC 7

LINEAR INEQUALITIES

LEARNING STANDARDS

7.1.1 COMPARE THE VALUES OF NUMBERS, DESCRIBE INEQUALITY AND HENCE, FORM ALGEBRAIC INEQUALITY.

7.2.2 SOLVE PROBLEMS INVOLVING LINEAR INEQUALITIES IN ONE VARIABLE.

CHAPTER 7

LINEAR INEQUALITIES

7.1 INEQUALITIES

7.1.1 Compare the values of numbers, describe inequality and hence, form algebraic inequality.

QUICK REVIEW:

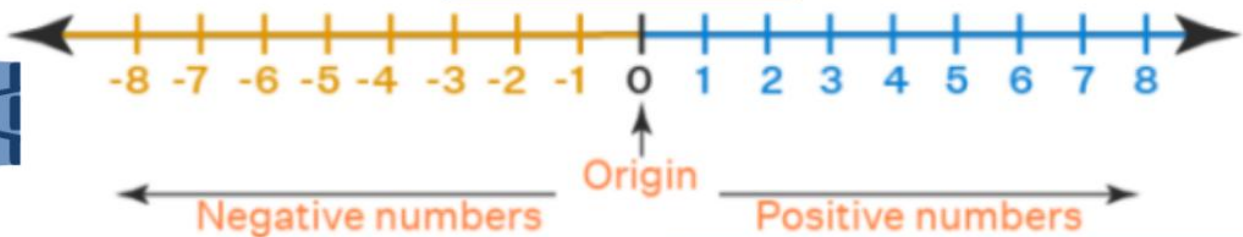
NEGATIVE NUMBERS

Example: -7 , -0.12

POSITIVE NUMBERS

Example: 7 , 0.12 , $+5.1$

NUMBER LINE



For the negative number, the more number less than zero, the lesser will be its value

For the positive number, the more number greater than zero, the greater will be its value

INEQUALITIES

Symbol	Meaning	Drawing	Key Word
$>$	greater than		-
$<$	less than		-
$\geq$	greater than and equal to		• At least • Not less than • Minimum
$\leq$	less than and equal to		• At most • Not more than • Maximum • Not exceed

SET 13

1. Fill in boxes with the symbol “<” or “>” so that it becomes a true statement. Hence, write an inequality for each statement by using “is less than” or “is greater than”.

Example 1: 5 18 5 is less than 18 Notes: For the positive number, the more number is greater than zero, the greater will be its value.	Example 2: 9 7 9 is greater than 7 Notes: For the positive number, the more number is greater than zero, the greater will be its value.
(a) 1 8 1 8	(a) 5 3 5 3
(b) 7 12	(b) 7 4
(c) 6 13	(c) 11 10
(d) 12 14	(d) 14 12

2. Fill in boxes with the symbol “<” or “>” so that it becomes a true statement.
Hence, write an inequality for each statement by using “is less than” or “is greater than”.

Example 1:

$$-18 \boxed{<} -5$$

– 18 is less than – 5

Notes:

For the negative number, the more number is less than zero, the lesser will be its value.

Example 2:

$$-7 \boxed{>} -9$$

– 7 is greater than – 9

Notes:

For the negative number, the more number is less than zero, the lesser will be its value.

(a) $-6 \boxed{\phantom{<}} -4$

$$-6 \boxed{\phantom{<}} -4$$

(a) $-3 \boxed{\phantom{<}} -5$

$$-3 \boxed{\phantom{<}} -5$$

(b) $-10 \boxed{\phantom{<}} -5$

$$-10 \boxed{\phantom{<}} -5$$

(b) $-4 \boxed{\phantom{<}} -9$

$$-4 \boxed{\phantom{<}} -9$$

(c) $-13 \boxed{\phantom{<}} -8$

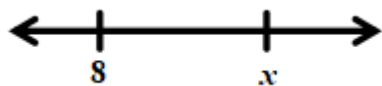
(c) $-8 \boxed{\phantom{<}} -11$

(d) $-20 \boxed{\phantom{<}} -14$

(d) $-16 \boxed{\phantom{<}} -20$

3. Based on each number line below, describe the relationship between two given numbers inequality by using “is greater than” or “is less than”. Hence form an algebraic inequality for the relationship.

Example 1:

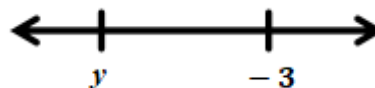


Answer:

(i) x is greater than 8

(ii) $x > 8$

Example 2:

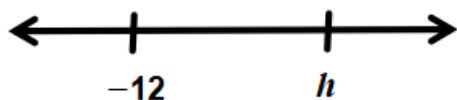


Answer:

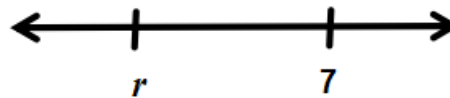
(i) y is less than -3

(ii) $y < -3$

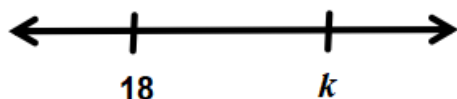
(a)



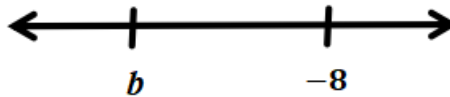
(a)



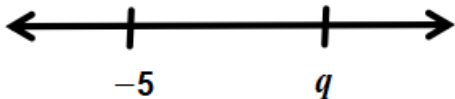
(b)



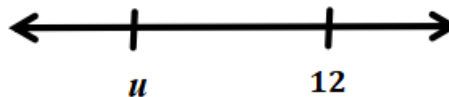
(b)



(c)



(c)



Describe each of the following situation by using “is less than or equal to”.

4. (i) Represent the inequality by using number line.
(ii) Form the algebraic inequality.

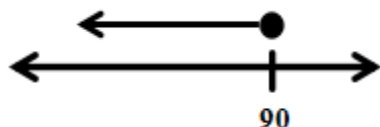
Example 1:

The maximum speed, s , for Pan Borneo Highway is 90 km/h.

Answer:

(i) s is less than or equal to 90.

(ii)



(iii) $s \leq 90$

(a) An lorry can carry a maximum weight (w) of 100 kg.

Answer:

(i) w 100.

(ii)

(ii) w 100

(b) The library silence zone to keep the library quiet, the noise level (n) must be no more than 30 decibels.

(c) The oven temperature to bake a perfect cake, the oven temperature (t) must not exceed 180 °C

5. (i) Describe the following situation by using “is greater than or equal to”.
 (ii) Represent the inequality by using number line.
 (iii) Form the algebraic inequality.

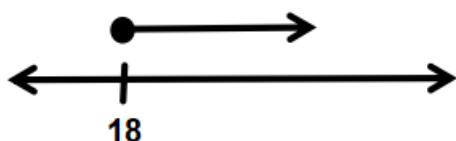
Example 1:

You must be at least 18 years old (a) to vote.

Answer:

(i) a is greater than or equal to 18.

(ii)



(iii) $s \geq 90$

(a) The roller coaster rule to ride the “Mega Drop”, a children’s height (h) must be at least 140 cm.

Answer:

(i) h 140.

(ii)

(ii) h 140

(b) “Basic Savings” account must maintain a minimum balance (b) of RM 100.

(c) Your phone needs not less than 20% battery (p) to start a system update.

UASA PRACTICE

1. Compare the values -15 and -8 and choose the correct algebraic inequality.

A. $-8 > -8$

B. $-15 < -8$

C. $-15 \geq -8$

D. $-15 \leq -8$

2. Consider the following two situations regarding a student's saving goal and age requirements for a competition.

Situation A	To join the under-15 Football Club, a student's age, a , must not be exceed 15 years old.
Situation B	To buy a jersey, a student must have a minimum saving, s , of RM 40.

For each situation above:

- (i) Describe the inequality in words.
- (ii) Form an algebraic inequality.
- (iii) Represent the inequality on a number line.

Situation A	Situation B

REFLECTION

Circle the emoji about how you understand this week's topic.

			
I got this!	I'm starting to get it.	I don't really get it.	I am so lost.

Today I've learnt _____

SET 14

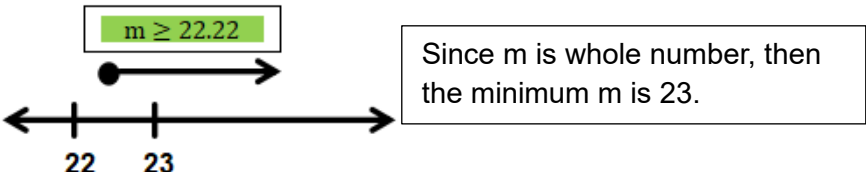
1. Solve each of the following inequalities:

Example 1: $x - 5 < 15$ Answer: $x - 5 < 15$ $x - 5 + 5 < 15 + 5$ $x < 20$ Add 5 to both sides of the inequality.	(a) $x + 3 \geq 9$
Example 2: $4y \leq -8$ Answer: $4y \leq -8$ $\frac{4y}{4} \leq \frac{-8}{4}$ $y \leq -2$ Divide both sides of the inequality by 4.	(a) $5h > 25$
Example 3: $-\frac{m}{3} > 5$ Answer: $-\frac{m}{3} > 5$ $-\frac{m}{3} \times (-3) < 5 \times (-3)$ $m < -15$ Multiply both sides of the inequality by -3 and reverse the inequality symbol.	(a) $-\frac{p}{7} \leq \frac{2}{7}$
Example 4: $6 - 3r \geq 12$ Answer: $6 - 3r \geq 12$ $6 - 3r - 6 \geq 12 - 6$ $-3r \geq 6$ $\frac{-3r}{-3} \leq \frac{6}{-3}$ $r \leq -2$ Subtract -6 from both sides of the inequality. Divide both sides of the inequality by -3 and reverse the inequality symbol.	(a) $-3 - 4t < -19$

2. Solve the following problems.

Example 1:

A runner wants to burn at least 500 calories. They burn 300 calories lifting weights and 9 calories per minute running. What is the minimum minutes (m) must they run? (Give your answer to the nearest whole number).

$$\begin{aligned}
 300 + 9m &\geq 500 \\
 300 + 9m - 300 &\geq 500 - 300 \\
 9m &\geq 200 \\
 \frac{9m}{9} &\geq \frac{200}{9} \\
 m &\geq 22.22
 \end{aligned}$$


Therefore, the minimum minutes they must run is 23 minutes.

- (a) Madam Wong wants to buy some novels for a school project. Each novel cost RM 8. She has a RM 5 discount coupon that she can apply to her total purchase. If she does not want to spend more than RM 40 in total, how many novels (n) can she buy most? (Give your answer to the nearest whole number).

UASA PRACTICE

1. A parking garage charges a flat fee of RM 3 for the first hour and RM 1.50 for each additional hour or part thereof. If Mr. Ling has RM 12, which inequality represents the maximum number of additional hours, h , he can park after the first hour?

A. $3 + 1.5h \geq 12$	C. $3 + 1.5h \leq 12$
B. $1.5h \leq 12$	D. $3h + 1.5 \leq 12$

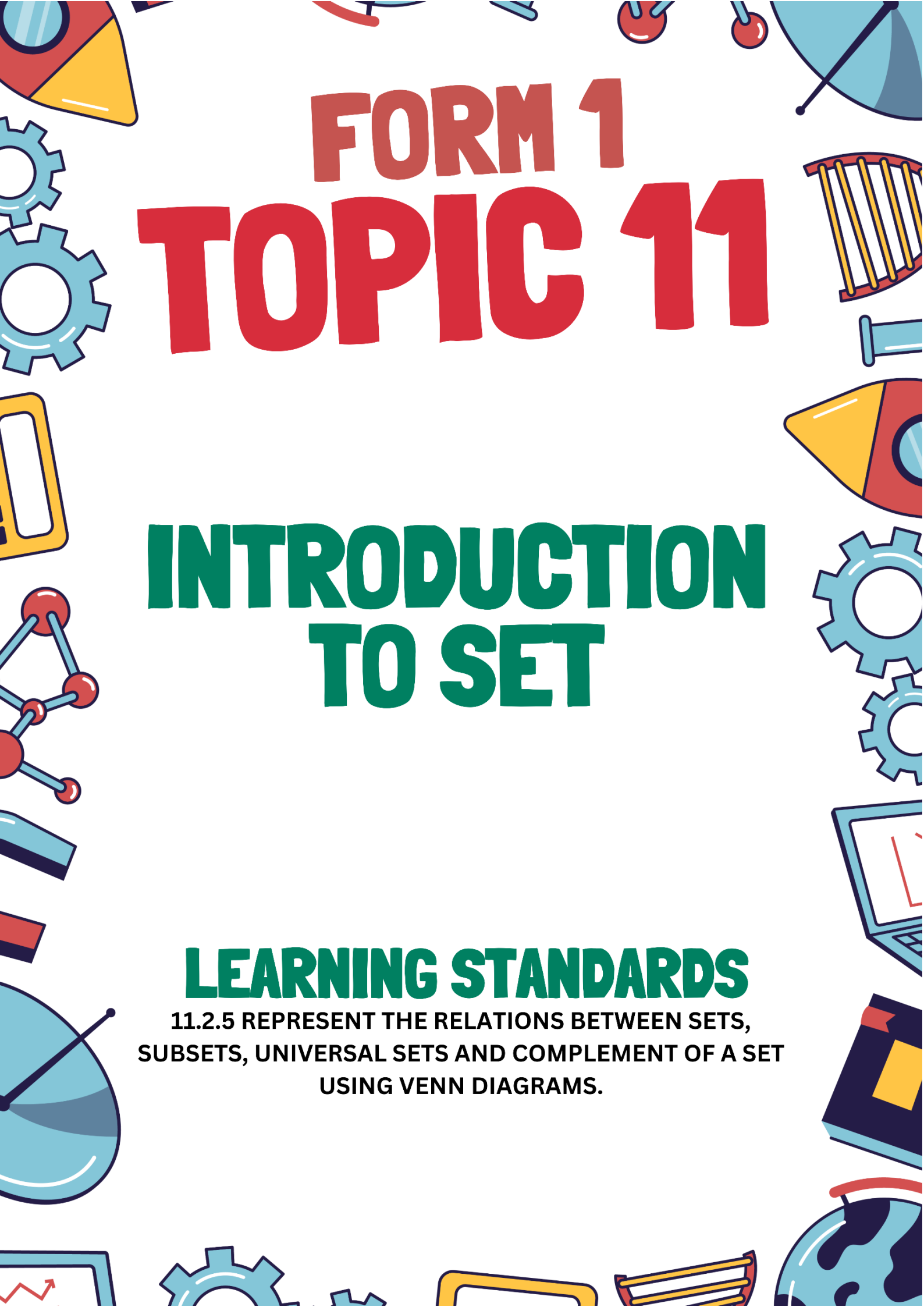
2. A local delivery company charges a flat fee of RM 5.00 for every delivery plus RM 1.50 per kilometer travel. Sarah wants to send a parcel to her friend, but she has a maximum budget of RM 35.00 for the delivery.
 - (a) Formulate a linear inequality to represent the situation, where x represents the distance in kilometers.
 - (b) Solve the inequality to find the maximum distance Sarah's parcel can be delivered.
 - (c) If the distance to her friend's house is 21.5 km, determine if Sarah has enough money. Justify your answer.

REFLECTION

Circle the emoji about how you understand this week's topic.

			
I got this!	I'm starting to get it.	I don't really get it.	I am so lost.

Today I've learnt _____



FORM 1

TOPIC 11

INTRODUCTION TO SET

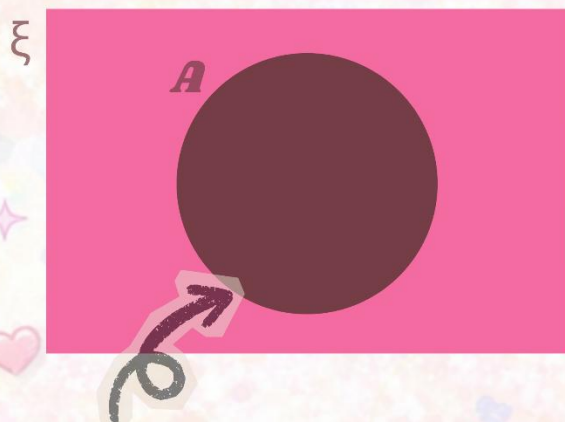
LEARNING STANDARDS

**11.2.5 REPRESENT THE RELATIONS BETWEEN SETS,
SUBSETS, UNIVERSAL SETS AND COMPLEMENT OF A SET
USING VENN DIAGRAMS.**

The Logic of Venn Diagrams

The Universal Set (ξ)

Represented by a rectangle containing all elements currently under mathematical discussion.

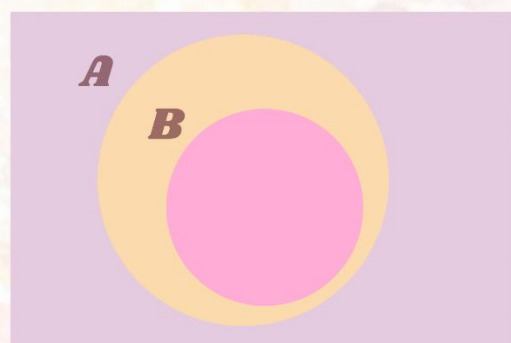


Individual Sets

Represented by enclosed shapes, typically circles, placed within the universal set rectangle.

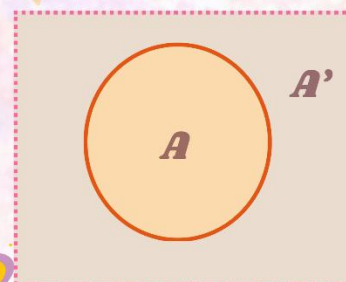
Subsets ($B \subset A$)

Shown by placing one circle (B) entirely inside another circle (A)



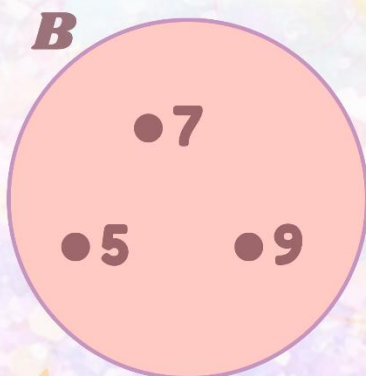
Complement of a Set (A')

Represented by shading the entire region outside the set circle but inside the rectangle.



Mapping Elements

Each specific object or element is represented by a dot within its respective shape.



Geometric Representation

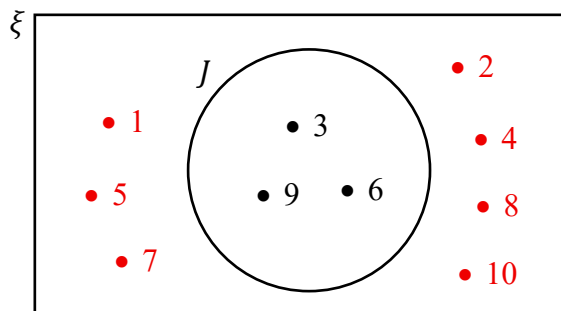
While circles are common, sets can also be ovals, rectangles, or triangles.



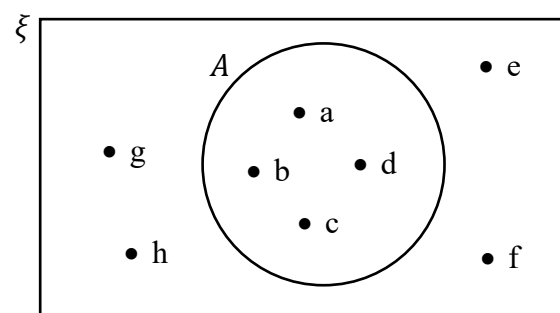
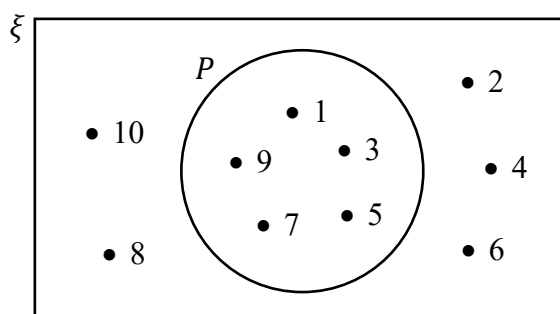
SET 15

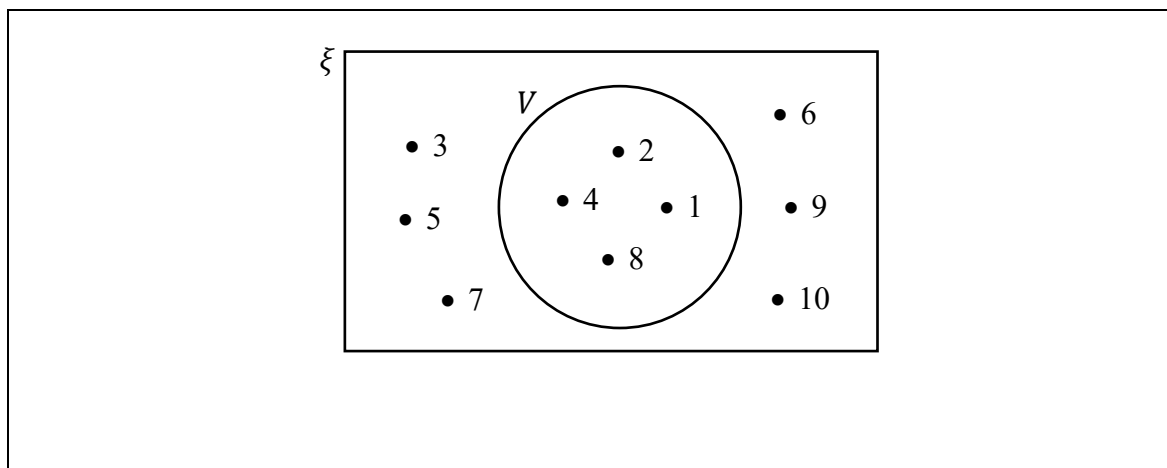
1. Based on the Venn Diagram given, list out the complement of the following set.

Example:



$$J' = \{1, 2, 4, 5, 7, 8, 10\}$$



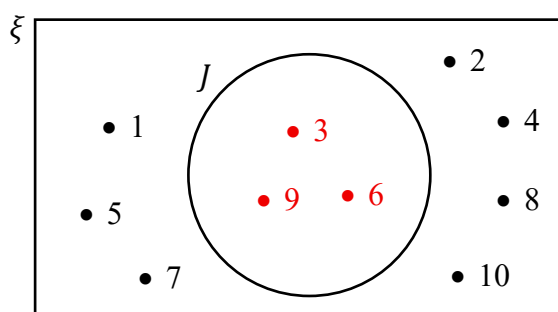


2. Draw a Venn Diagram to represent the relationship between the universal set ξ and one given set.

Example:

$$\xi = \{x: 1 \leq x \leq 10, x \text{ is an integer}\}$$

$$\text{Set } J = \{3, 6, 9\}$$



(a) $\xi = \{x: 1 \leq x \leq 10, x \text{ is an integer}\}$

$$\text{Set } P = \{2, 4, 6, 8, 10\}$$

(b) $\xi = \{a, b, c, d, e, f, g, h\}$
 Set $A = \{a, b, c, d\}$

(c) $\xi = \{x: 1 \leq x \leq 10, x \text{ is an integer}\}$
 Set $V = \{x = x \text{ is factor of } 8\}$

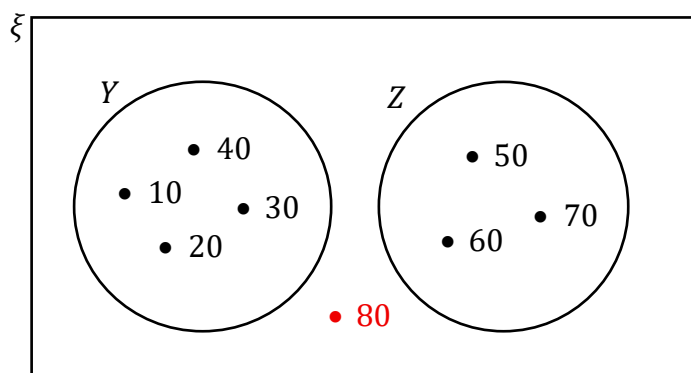
3. Draw a Venn Diagram to represent the relationship between the universal set ξ and two given sets.

Example:

$\xi = \{10, 20, 30, 40, 50, 60, 70, 80\}$

Set $Y = \{10, 20, 30, 40\}$

Set $Z = \{50, 60, 70\}$



(a) $\xi = \{x: 1 \leq x < 10, x \text{ is integer}\}$

Set $K = \{x = x \text{ is multiple of } 3\}$

Set $L = \{x = x \text{ is the multiple of } 2\}$

(b) $\xi = \{a, b, c, d, e, f, g, h\}$

Set $F = \{a, b, c, d\}$

Set $G = \{e, f\}$

(c) $\xi = \{x: 3 \leq x \leq 16, x \text{ is an integer}\}$

Set $A = \{x : x \text{ is an odd number}\}$

Set $B = \{x : x \text{ is a multiple of } 4\}$

4. Draw a Venn diagram to represent the situation below.

In a class, students like to eat apples and orange. Some students like neither oranges nor apples. Sets ξ , X and Y are defined as follows:

$\xi = \{\text{students in the class}\}$

Set $X = \{\text{students like apples}\}$

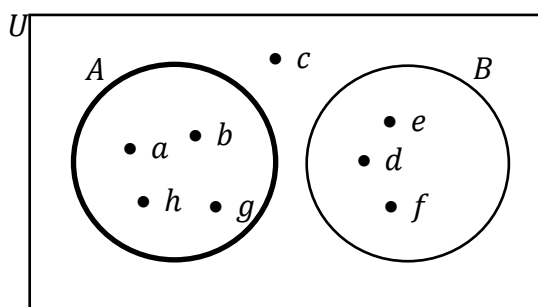
Set $Y = \{\text{students like oranges}\}$



Represent the relationship between sets ξ , X and Z using a venn Venn diagram.

UASA PRACTICE

- Given the universal set $U = \{1, 2, 3, 4, 5, 6, 7, 8\}$, and $A = \{2, 4, 6\}$, what is A' ?
 A. $\{8\}$ C. $\{1,3,5,7\}$
 B. $\{2,4,6\}$ D. $\{1,3,5,7,8\}$
- The universal set is $U = \{a, b, c, d, e, f, g, h\}$, set A and B is shown in the Venn diagram below.



- List the elements of set A
- List the elements of set B
- Determine B'

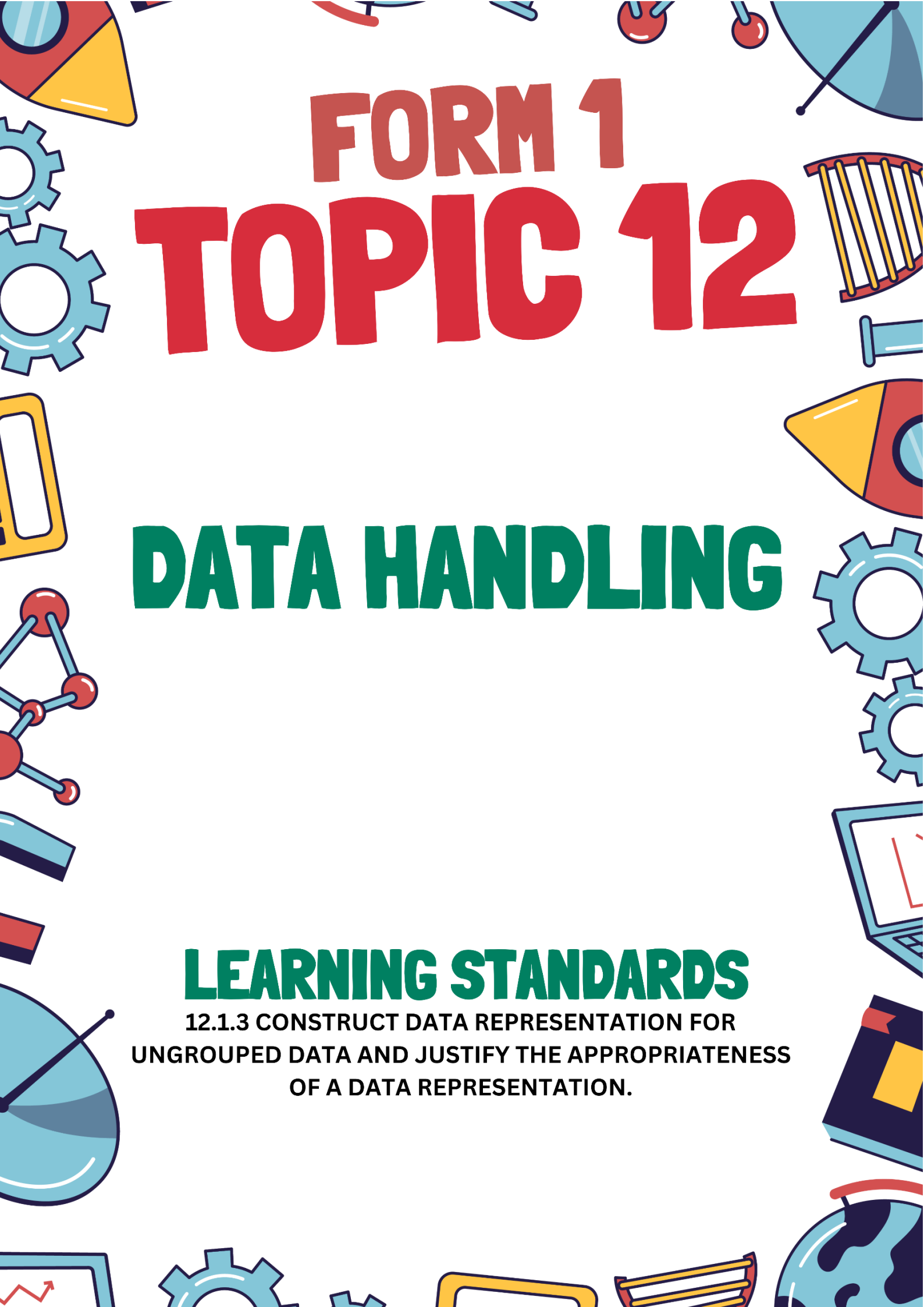
3. The universal set $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$, Set A consists of multiple of 2 less than 10 and Set B consists of odd numbers less than 10.
- List the elements of set B.
 - Find B' .
 - Draw a Venn diagram to represent sets U , A and B

REFLECTION

Circle the emoji about how you understand this week's topic.

			
I got this!	I'm starting to get it.	I don't really get it.	I am so lost.

Today I've learnt _____



FORM 1

TOPIC 12

DATA HANDLING

LEARNING STANDARDS

**12.1.3 CONSTRUCT DATA REPRESENTATION FOR
UNGROUPED DATA AND JUSTIFY THE APPROPRIATENESS
OF A DATA REPRESENTATION.**

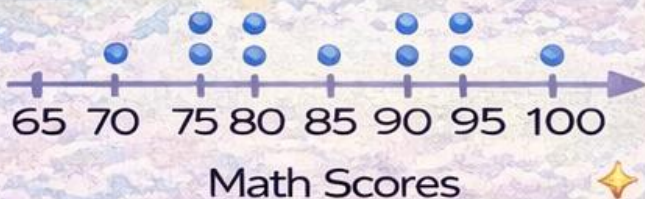
CONSTRUCTING DATA REPRESENTATION

Dot Plot

Dot plots use dots to represent individual data points along a number line.

Great for showing the distribution of small sets of data

Dot Plot



Stem-and-Leaf Plot

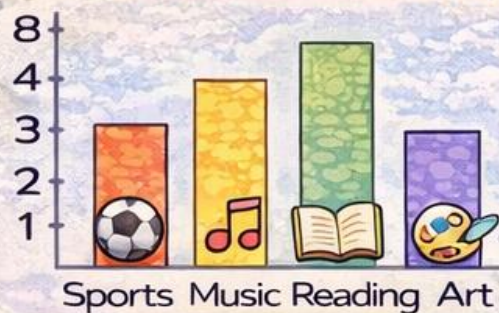
Stem	Leaf
6	5, 7
7	2, 3, 8, 8
8	1, 4, 7

Leaf 5 represents a score of 65

Bar Chart

Bar charts use rectangular bars to show the amount of data in each category

Good choice for showing comparisons between categories



Choose the most suitable chart to represent your data clearly!

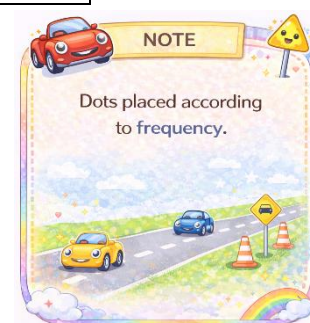
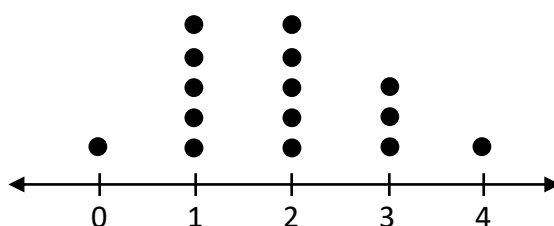
••• Dot Plot ■ Stem-and-Leaf Plot ■ Bar Chart

SET 16

Example:

The following data shows the number of siblings of 15 students in a class. Represent the data by using a dot plot.

2	1	3	2	4
1	2	3	1	0
2	1	3	2	1



- (a) The data shows the number of text messages sent by a group of students on a particular day. Represent the data by using a dot plot and justify the appropriateness of the data representation.

3	4	8	7	11
6	5	7	6	3
9	6	5	11	8

Example:

The marks obtained by 12 students in a Mathematics test are as follows. Represent the data by using a stem-and-leaf plot.

35	42	38	41	39	35
38	41	36	39	44	42

Stem	Leaf
3	5 5 6 8 8 9 9
4	1 1 2 2 4

Key: 3 | 5 represents 35

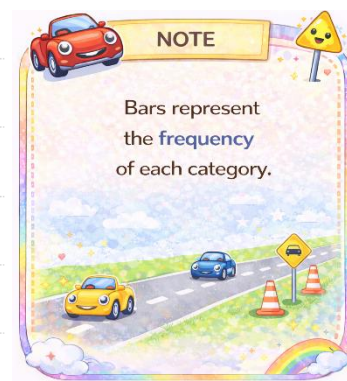
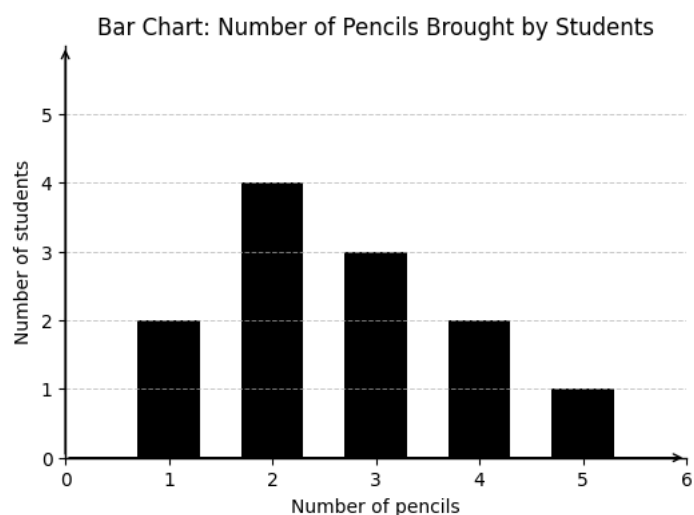
- (a) In a survey, the ages of 24 readers of a magazine are recorded as follows. Represent the data by using a stem-and-leaf plot.

44	53	33	65	51	30	42	34
57	36	51	32	39	44	25	31
58	47	31	22	58	38	60	47

Example:

The following data shows the number of pencils brought by 12 students. Construct a bar chart to represent the data.

Number Of Pencils	1	2	3	4	5
Number Of Students	2	4	3	2	1



- (a) A survey was carried out in a class to find out how the students travel to school, and the results are as shown in the table below. Construct a bar chart to represent the data.

Transportation	Car	School Bus	Public Bus	Bicycle	Walk
Frequency	8	10	7	2	5

UASA PRACTICE

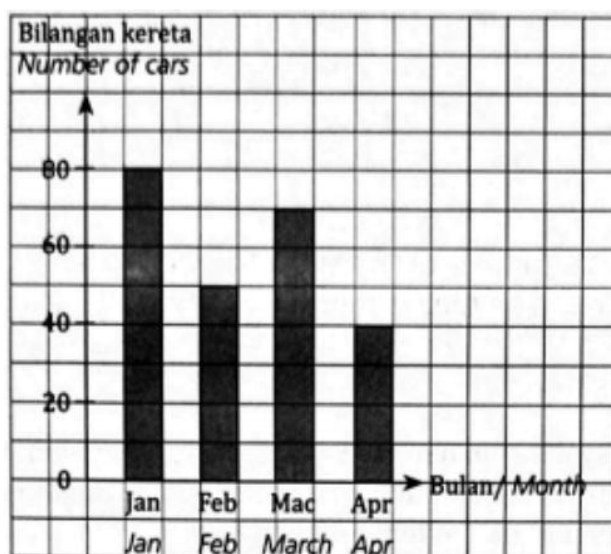
1. Which of the following is correct?

	Data	Type Of Data
A.	Height of students	Numerical Data
B.	Types of cars	Numerical Data
C.	Speed of car	Categorical Data
D.	Weather temperature	Categorical Data

2. Sofia counted the number of matches in 20 boxes and the number of matches in each box are shown as below. Represent the data by using a dot plot.

47	49	46	50	52	51	50	49	49	50
50	48	51	50	51	50	49	50	47	52

3. The following bar chart shows the number of cars sold from January to April.



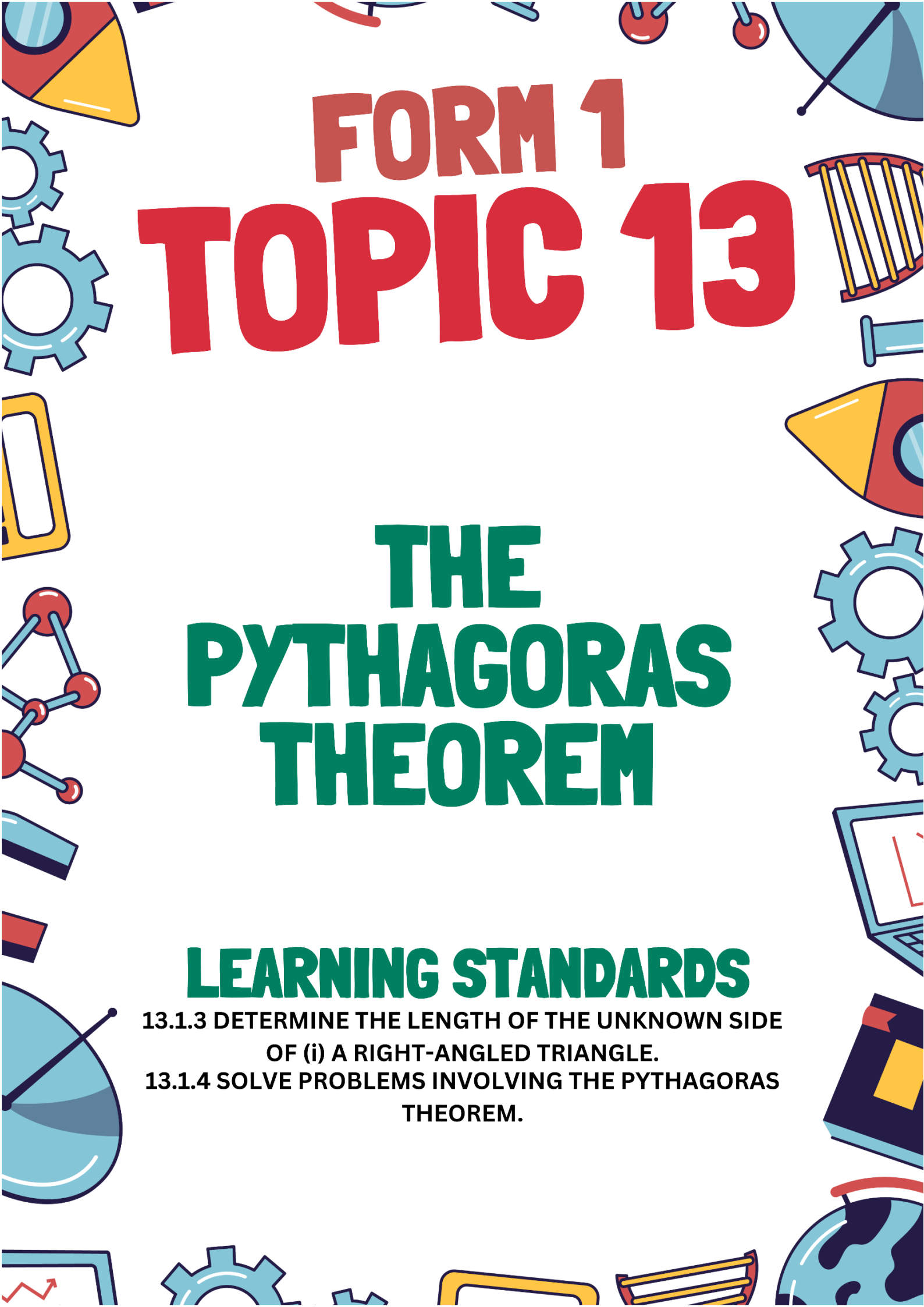
- (i) Find the total number of cars sold in the four months.
 (ii) If 80% of the cars sold are Malaysian cars, find the number of Malaysia cars sold in the four months.

REFLECTION

Circle the emoji about how you understand this week's topic.

			
I got this!	I'm starting to get it.	I don't really get it.	I am so lost.

Today I've learnt _____



FORM 1

TOPIC 13

THE PYTHAGORAS THEOREM

LEARNING STANDARDS

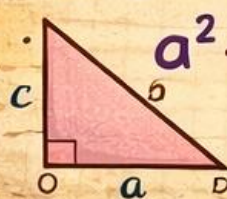
13.1.3 DETERMINE THE LENGTH OF THE UNKNOWN SIDE
OF (i) A RIGHT-ANGLED TRIANGLE.

13.1.4 SOLVE PROBLEMS INVOLVING THE PYTHAGORAS
THEOREM.

PYTHAGORAS THEOREM

PYTHAGORAS THEOREM

In a right-angled triangle:



$$a^2 + b^2 = c^2$$

c = hypotenuse
(longest side)

a, b = legs

FINDING UNKNOWN SIDES

1 Find a leg:

1. Identify hypotenuse c and other leg b .

2. Rearrange: $a^2 = c^2 - b^2$

3. Calculate: $a = \sqrt{c^2 - b^2}$



$$a = 7 \text{ cm}$$

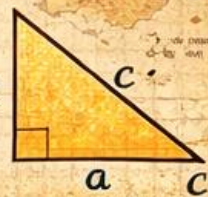
FIND HYPOTENUSE:

1 Identify legs a and b .

2. Use: $c^2 = a^2 + b^2$

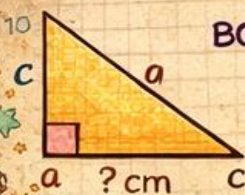
3. Calculate: $c = \sqrt{a^2 + b^2}$

3. Calculate: $c = \sqrt{a^2 + b^2}$



SOLVING PROBLEMS

1. Calculate the length of AC, given AB = 6 cm, BC = 8 cm.



$$BC^2 = AB^2 + AC^2$$

$$8^2 = 6^2 + AC^2$$

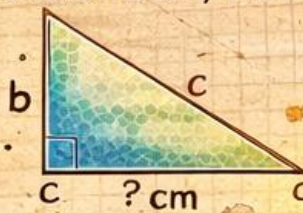
$$64 = 36 + AC^2$$

$$AC^2 = 64 - 36$$

$$= 28$$

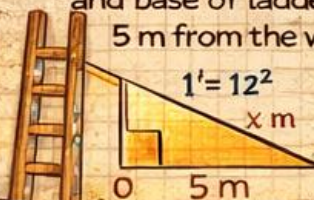
$$AC = \sqrt{28} \text{ cm}$$

$$L = 2\sqrt{38} \text{ cm}$$



$$a = 5.29 \text{ cm}$$

2 Find the length of ladder, given the wall is 12 m high, and base of ladder 5 m from the wall



$$1^2 = 12^2$$

$$x^2 = 169$$

$$x = 13 \text{ m}$$

3 Determine the unknown side x :



$$10^2 = 6^2 + x^2$$

$$100 = 36 + x^2$$

$$x^2 = 100 - 36$$

$$x^2 = 64$$

$$x = \sqrt{64} \text{ cm}$$

$$AC = 2\sqrt{7} \text{ cm}$$

$$= 5.29 \text{ cm}$$

4 Find the length of ladder, given the wall is 12 m high and base of ladder is 5 m from.

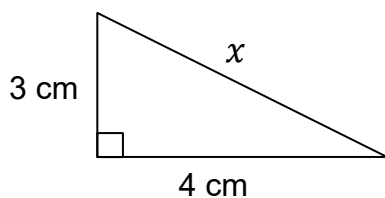


$$L = \sqrt{169} \text{ m} = 17 \text{ cm}$$

SET 17

1. Find the value of x for each of the following right-angled triangles.

Example:



$$x^2 = 3^2 + 4^2$$

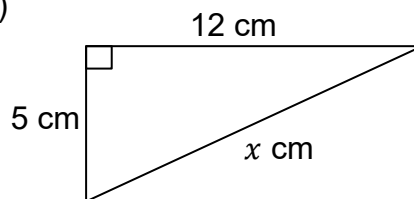
$$x^2 = 9 + 16$$

$$x^2 = 25$$

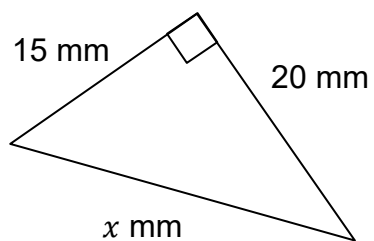
$$x = \sqrt{25}$$

$$x = 5$$

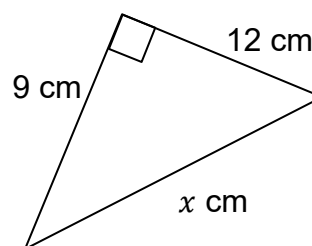
(a)



(b)

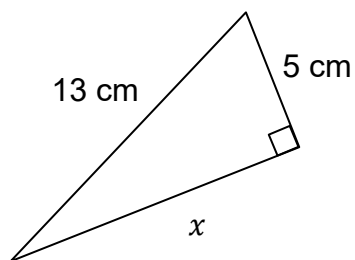


(c)

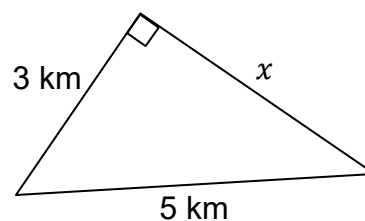


2. Find the value of x for each of the following right-angled triangles.

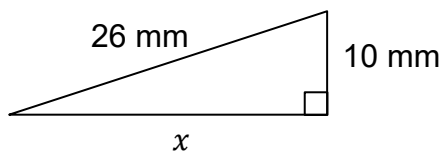
Example:



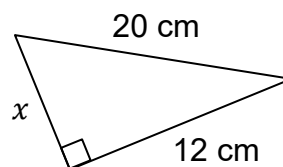
1.



2.

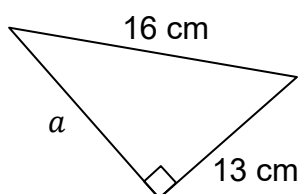


3.

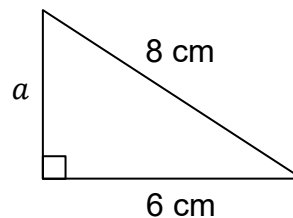


3. Find the length of the side marked by letter a below. Give the answer to two decimal places.

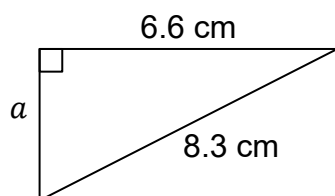
Example:



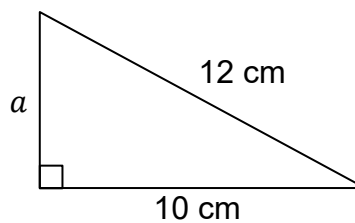
1.



2.

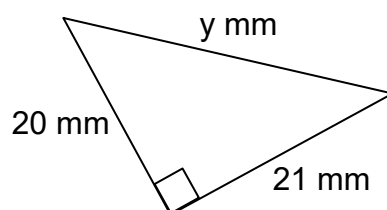


3.



UASA PRACTICE

1. The diagram below shows a right-angled triangle.



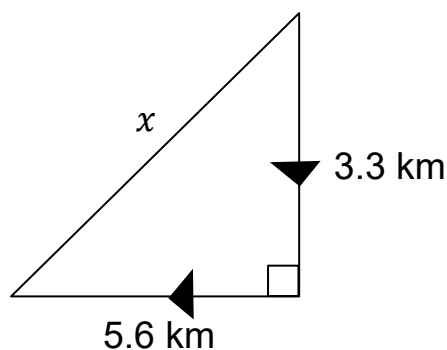
Calculate the value of y .

- A. 2.9
- B. 4.1
- C. 29
- D. 41

2. Circle the correct value of x for each triangle.

	13 cm
	14 cm
	15 cm
	10.1 cm
	10.5 cm
	11.2 cm

3. Azmi jogged 3.3 km to the south and then 5.6 km to the west. What is the distance, in km, of Azmi from his starting point?



Let x be the distance of Azmi from starting point.

REFLECTION

Circle the emoji about how you understand this week's topic.

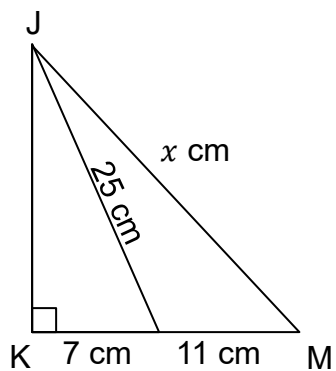
			
I got this!	I'm starting to get it.	I don't really get it.	I am so lost.

Today I've learnt _____

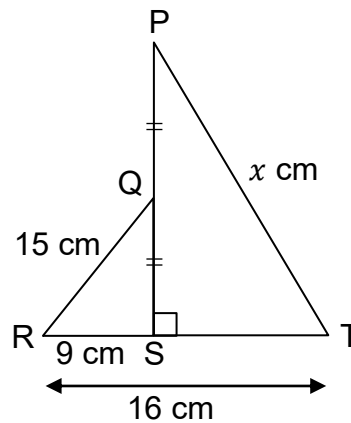
SET 18

1. Find the value of x in each of the following diagram.

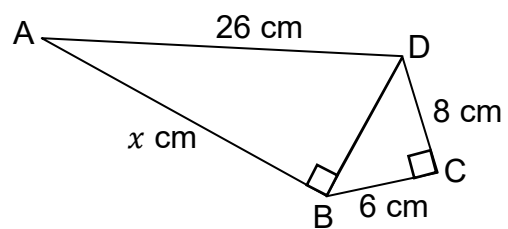
Example:



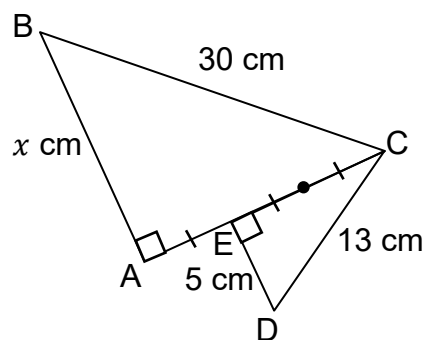
(a)



2.

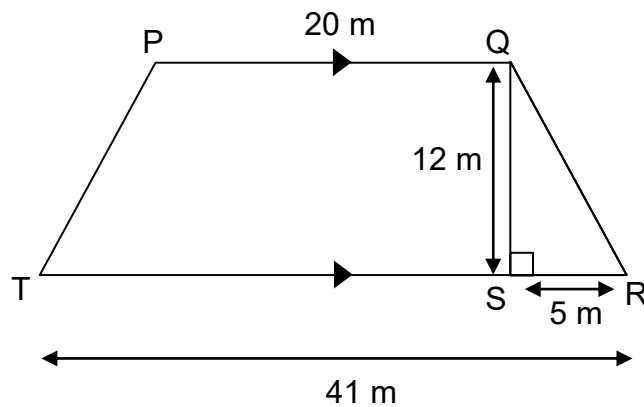


3.



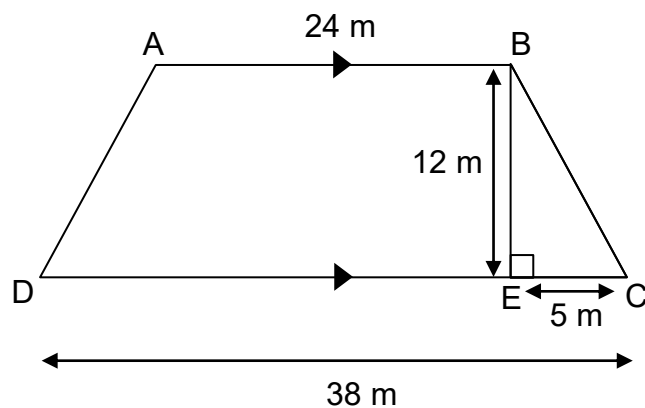
Example:

The diagram shows a plot of land which is in the shape of trapezium, PQRS, owned by Amani. The area that is in the shape of a right – angled triangle, QRS, is planted with flowers and remaining area planted with grass.



Amani decides to fence the area planted with grass. Calculate the length, in m, of fence required.

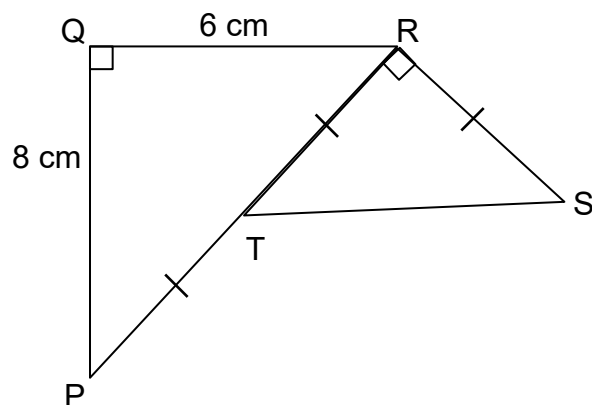
- (a) The diagram shows a plot of land which is in the shape of trapezium, ABCD, owned by Roslan. The area that is in the shape of a right – angled triangle, BCE, is planted with flowers and remaining area planted with grass.



Roslan decides to fence the area planted with grass. Calculate the length, in m, of fence required.

UASA PRACTICE

1. The diagram below consists of two right – angled triangles.



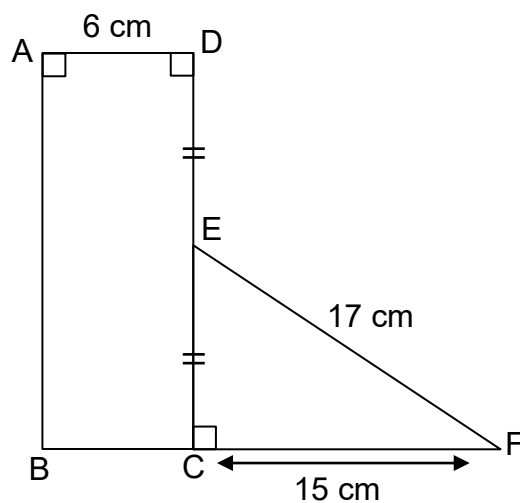
Calculate the length of ST, in cm.

- A. 5
B. 7.07
C. 8.52
D. 10

2. Find the perimeter, in cm of the whole diagram. Circle the correct answer.

	114
	104
	140
	42
	24
	44

3. The diagram below shows a rectangle ABCD and a right – angled triangle ECF.



Find the perimeter, in cm, of the whole diagram.

REFLECTION

Circle the emoji about how you understand this week's topic.

			
I got this!	I'm starting to get it.	I don't really get it.	I am so lost.

Today I've learnt _____

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