Supporting Our Children in Learning Mathematics

Mr Tay Lip Seng

Leaders of Character, Championing Service and Excellence

IMPORTANCE OF LEARNING MATHEMATICS

Mathematics contributes to the development and understanding in many disciplines and provides the foundation for many of today's innovation and tomorrow's solution.

AIMS OF MATHEMATICS EDUCATION

Acquire and apply mathematical concepts and skills

Develop cognitive and metacognitive skills through a mathematical approach to problem solving

Develop positive attitude towards mathematics.

3

EXAMINATION FORMAT (STANDARD MATHEMATICS)

Paper	Booklet	Item Type	No of questions	No. of marks per question	No of marks	Duration
1 (No calculator)	A	Multiple Choice Questions	15	1 or 2 *(10 x 1 mark, 5 x 2 marks)*	20	1 h
	B	Short Answer Questions	15	1 or 2 *(5 x 1 mark, 10 x 2 marks)*	25	
2 (Calculator is allowed)		Short Answer Questions	5	2	10	1h 30 min
		Structured / Long-answer questions	12	3 , 4 or 5	45	
Total			**47**		**100**	2 h 30 min

EXAMINATION FORMAT (FOUNDATION MATHEMATICS)

Paper	Booklet	Item Type	No of questions	No. of marks per question	No of marks	Duration
1 (No calculator)	A	Multiple Choice Questions	30	1 or 2	30	1 h
	B	Short Answer Questions	10	2	20	
2 (Calculator is allowed)		Short Answer Questions	10	2	20	1h
		Structured / Long-answer questions	6	3 or 4	20	
Total			46		90	2 h

ITEM TYPES (1)

Item Type	Remarks
Multiple Choice Questions (1 mark or 2 marks)	• Four options are provided of which only one is correct • The 1-mark multiple-choice questions will be straightforward questions that assess basic concepts and skills

ITEM TYPES (2)

Item Type	Remarks
Short Answer Questions (1 mark or 2 marks)	• Candidate writes his answer in the space provided. Any unit required in an answer is provided and the candidate must give his answer in that unit • The 1-mark questions will be straightforward questions that assess basic concepts and skills • For 2-mark questions, they may comprise one or two parts. Each correct answer for each question part earns one mark. If a candidate provides an incorrect answer, 1 mark is awarded for the correct method or working shown. • Workings and relevant steps must be shown clearly

ITEM TYPES (3)

Item Type	Remarks
Structured / Long-answer questions (3 marks , 4 marks or 5 marks)	• May comprise one or more parts. Each correct answer for each question part earns one mark. If a candidate provides an incorrect answer, 1 mark is awarded for the correct method or working shown. • The candidate must show his method of solution (working steps) clearly and write his answer in the space provided with the unit if required

APPROVED CALCULATOR
(PAPER 2)

The list of approved calculators is available on the SEAB website - http://www.seab.gov.sg

SEAB
Singapore Examinations and Assessment Board

Examinations ∨   Services ∨   News ∨   About Us ∨   FAQs ∨   🔍   ❗²

Examinations ∨

PSLE

GCE N(T)-Level

GCE N(A)-Level

GCE O-Level

GCE A-Level

Services ∨

News ∨

PSLE

The Primary School Leaving Examination (PSLE) is an annual national examination that is taken by candidates at the end of their final year of primary school education, in Singapore.

More information about the PSLE is available below.

Examination Calendar 2024

ASK SEAB

Leaders of Character, Championing Service and Excellence

TIME MANAGEMENT (STANDARD MATHEMATICS)

Paper	Recommended Time Spent Per Mark	Remarks
1 (No calculator)	Slightly more than 1 min	For a 1-mark question, candidate are recommended to spend slightly more than 1 min to solve. Candidate would have around 10 min to check the completed paper
2 (Calculator is allowed)	1.5 min	For a 2-mark question, candidate are recommended not to spend more than 3 min to solve. Candidate would have around 10 min to check the completed paper

TIME MANAGEMENT
(FOUNDATION MATHEMATICS)

Paper	Recommended Time Spent Per Mark	Remarks
1 (No calculator)	Slightly more than 1 min	For a 1-mark question, candidate are recommended to spend slightly more than 1 min to solve. Candidate would have around 10 min to check the completed paper
2 (Calculator is allowed)	1.25 min (1 min 15 s)	For a 2-mark question, candidate are recommended not to spend more than 2.5 min to solve. Candidate would have around 10 min to check the completed paper

COGNITIVE LEVEL
(ASSESSMENT OBJECTIVES)

Assessment Objective 1:
- Recall specific mathematics facts, concepts, rules and formula
- Perform straightforward computations

Assessment Objective 2:
- Interpret information
- Apply mathematical concepts and skills in a variety of contexts

Assessment Objective 3:
- Reason mathematically
- Analyse information and make inferences
- Select appropriate strategies to solve problems

ASSESSMENT OBJECTIVE 1

Description
- Recall specific mathematics facts, concepts, rules and formula
- Perform straightforward computations

Find the area of the shaded triangle.

18 cm

10 cm

15 cm
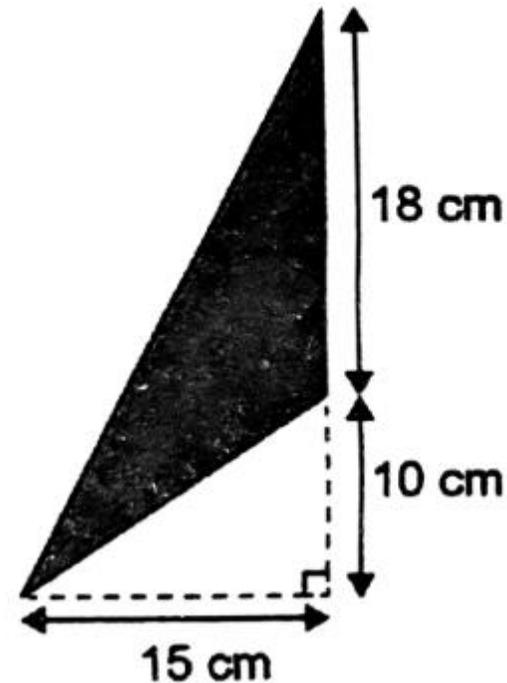
PSLE 2021

ASSESSMENT OBJECTIVE 2

Description
- Interpret information
- Apply mathematical concepts and skills in a variety of contexts

Find the area of the shaded triangle in each figure.

(a) ABCD is a square of side 12 cm and DE = EC.
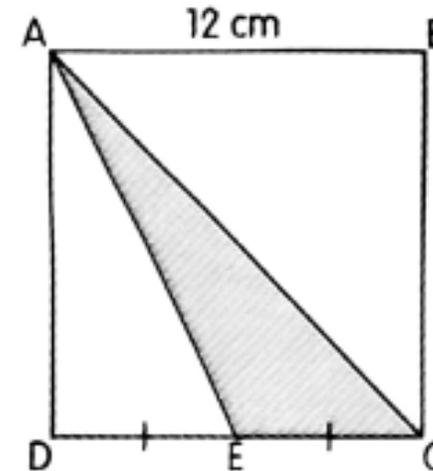
5A Targeting Mathematics Workbook

ASSESSMENT OBJECTIVE 3

Description
- Reason mathematically
- Analyse information and make inferences
- Select appropriate strategies to solve problems

Find the area of the shaded part.
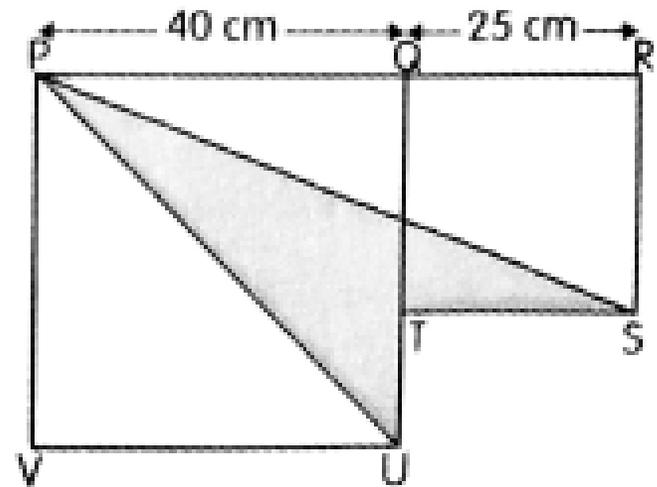
5A Targeting Mathematics Workbook

NUMBER

Includes topics such as Whole Numbers, Fractions and Decimals

Round 21 345 to the nearest thousand.

(1)   20 000

(2)   21 000

(3)   21 300

(4)   22 000

Arrange from the largest to the smallest: 0.4, 0.44, 0.404

	Largest				Smallest
(1)	0.4	,	0.404	,	0.44
(2)	0.44	,	0.404	,	0.4
(3)	0.44	,	0.4	,	0.404
(4)	0.404	,	0.44	,	0.4

NUMBER

Which of the following shows $\frac{1}{4}$ of the figure shaded?
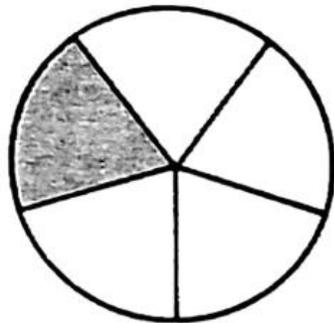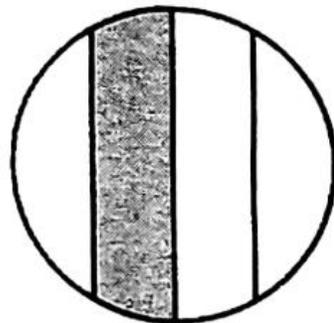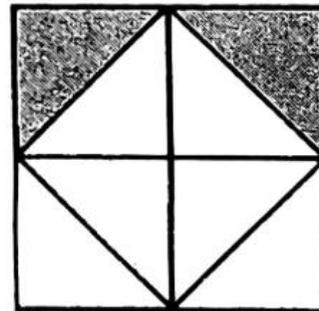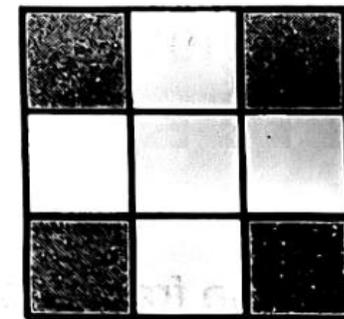
(1) (2) (3) (4)

Mariam had caps for sale. In the morning, she sold $\frac{1}{3}$ of the caps. In the afternoon, she sold $\frac{1}{5}$ of the remaining caps. After that, there were 56 caps left. How many caps did Mariam have at first?

NUMBER

The table shows the prices of tickets for a concert.

Type	Age	Price per ticket
Adult	Below 60 years	$16
	60 years and above	$11
Child	Below 16 years	$7

The number of adult tickets sold was 5 times the number of child tickets sold.

$\frac{5}{8}$ of the adult tickets sold were for adults aged below 60 years. A total of $5589 was collected from the sale of tickets.

(a) What fraction of the tickets sold were for adults aged 60 years and above?
Give your answer in the simplest form.

(b) What was the total number of tickets sold?

MEASUREMENT

Includes topics such as length, mass, volume, time, area and perimeter, volume

What is the duration from 09 35 to 14 00?

(1) 4 h 25 min

(2) 4 h 35 min

(3) 5 h 25 min

(4) 5 h 35 min

Which of the following is the same as 2 kg 30 g?

(1) 230 g

(2) 2030 g

(3) 2300 g

(4) 20 030 g

MEASUREMENT

Three containers with some water are shown below.
Which container has the most water and which container has the least?
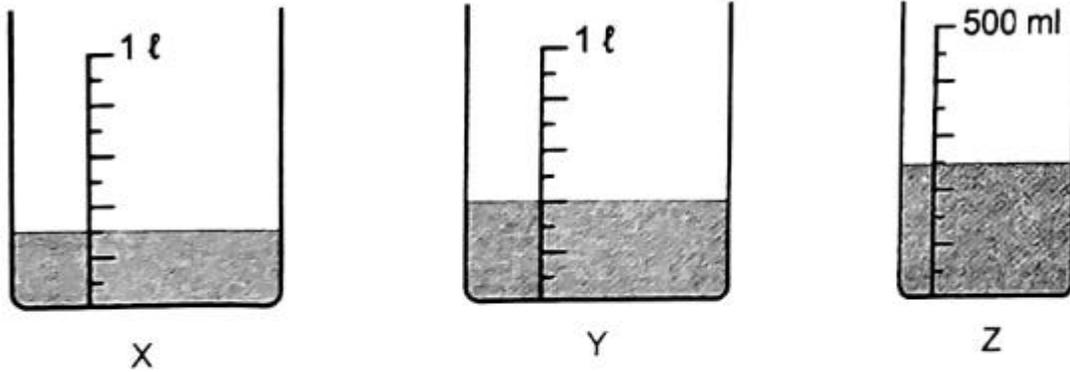
	Most	Least
(1)	Y	X
(2)	Y	Z
(3)	Z	X
(4)	Z	Y

What is the volume of the cube shown below?

9 cm
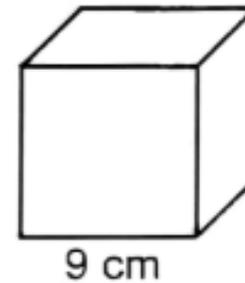
MEASUREMENT

In Figure 1, the total perimeter of 4 rectangles R and square S is 144 cm. They are joined to form a large square in Figure 2 which has a perimeter of 56 cm.
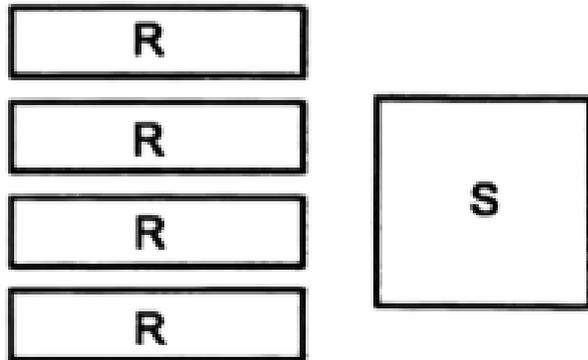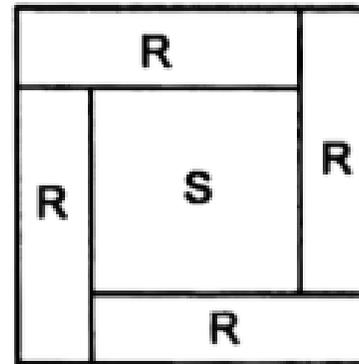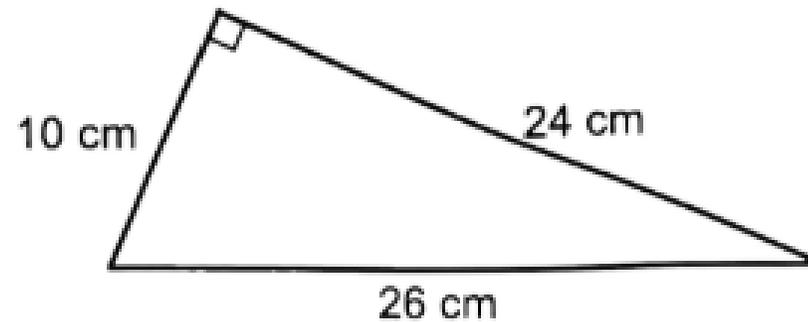

Figure 1

Figure 2

Find the length of one side of square S.

MEASUREMENT

The figure shows a right-angled triangle.

(a)   Find the area of the triangle.

(b)   Dinesh wants to cut such triangles from a rectangular piece of cardboard 60 cm by 100 cm. At most, how many of such triangles can he cut?
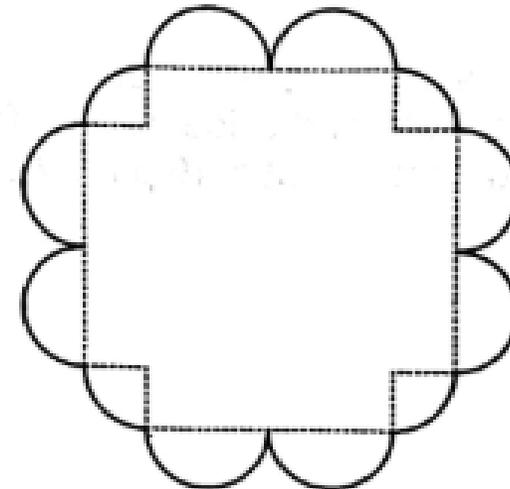
MEASUREMENT

The figure shows a table mat. The outside edge of the mat is formed by 8 semicircles and 4 quarter circles, each of radius 7 cm.

(a)   Find the perimeter of the mat.

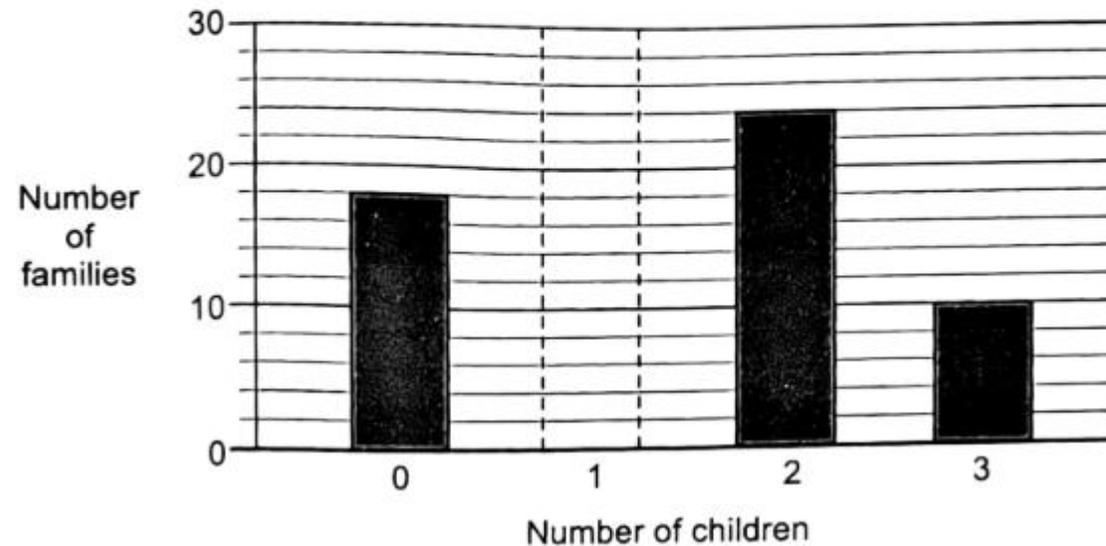(b)   Find the area of the mat.

Take $\pi = \dfrac{22}{7}$.

STATISTICS

Includes topics such as bar graphs, line graphs, table, pie chart and average.

The bar graph shows the number of children in the families living in a block of flats. $\frac{1}{3}$ of the families have 1 child. Draw the bar that shows the number of these families in the graph.
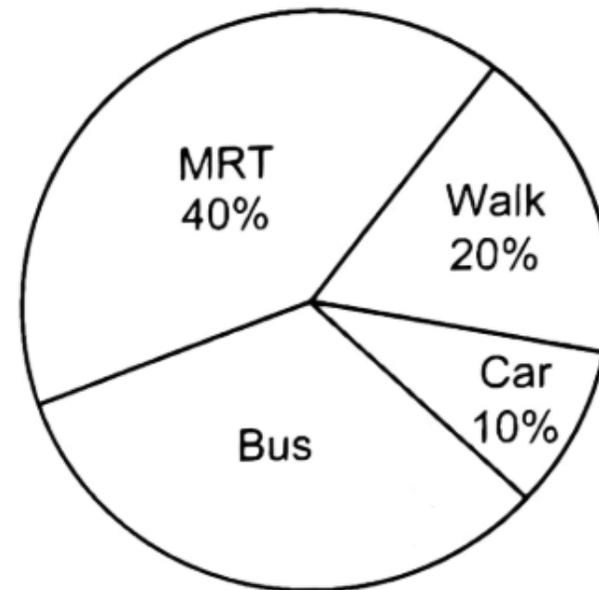
STATISTICS

The average of three **different** 2-digit numbers is 25. Of the three numbers, find the largest possible number.

The pie chart shows the different ways a group of students go to school.
What is the ratio of the number of students who walk to school to the number who go by bus?
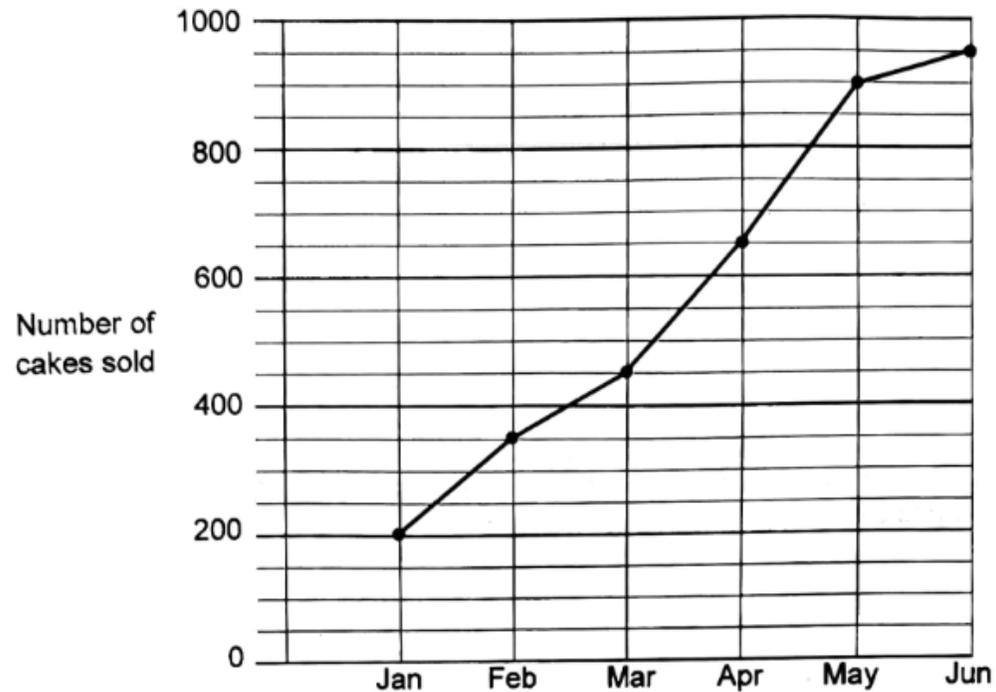
(1)   1 : 2

(2)   2 : 1

(3)   2 : 3

(4)   3 : 2

STATISTICS

9. The graph below shows the number of cakes sold each month by a new bakery from January to June.

(a) How many more cakes were sold in May than in April?

(b) What was the percentage increase in the number of cakes sold in June compared to January?

STATISTICS

The table shows the number of male and female members in a club in June. The number of female adults is not shown.

Age Group	Number of members in June	
	Male	Female
Youth (Below 20 years)	15	28
Adult (20 to 59 years)	15	?
Senior Citizen (60 years and above)	32	44

(a)   50% of all the female members in the club were adults. How many female adults were there in the club?
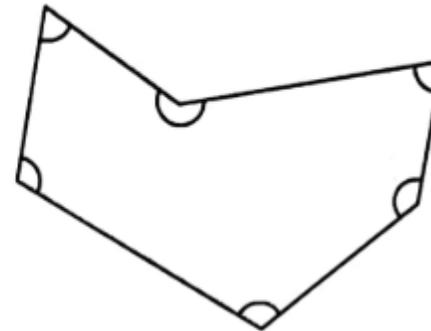
GEOMETRY

Includes topics such as concepts of angle, perpendicular and parallel lines, nets, line symmetry, 8-point compass, angles involving triangles and quadrilaterals and net.

Six angles are marked in the figure. How many of them are larger than a right angle?
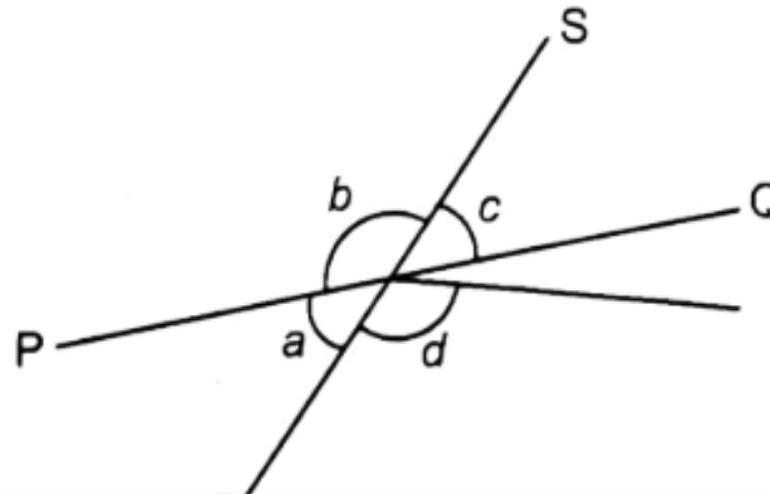
(1)   5

(2)   2

(3)   3

(4)   4

GEOMETRY

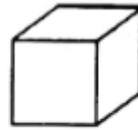In the figure, PQ and RS are straight lines. Which one of the following is true?
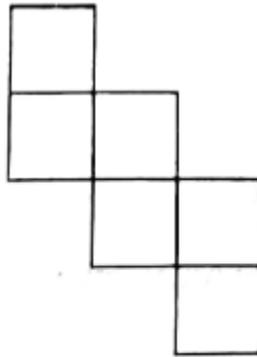
(1) $\angle a = \angle c$

(2) $\angle b = \angle d$

(3) $\angle a + \angle c = 180°$
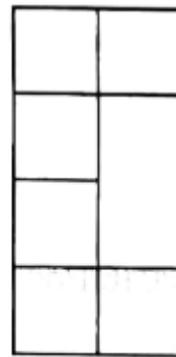
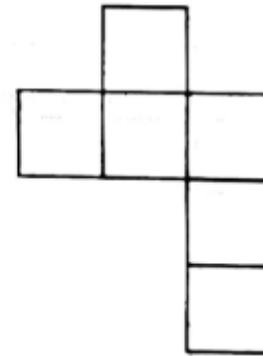(4) $\angle b + \angle d = 180°$

GEOMETRY

Which of the following is a net of a cube?
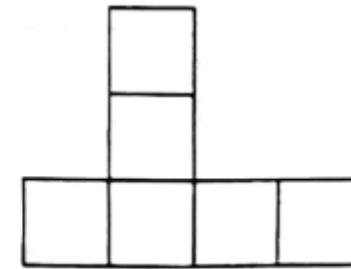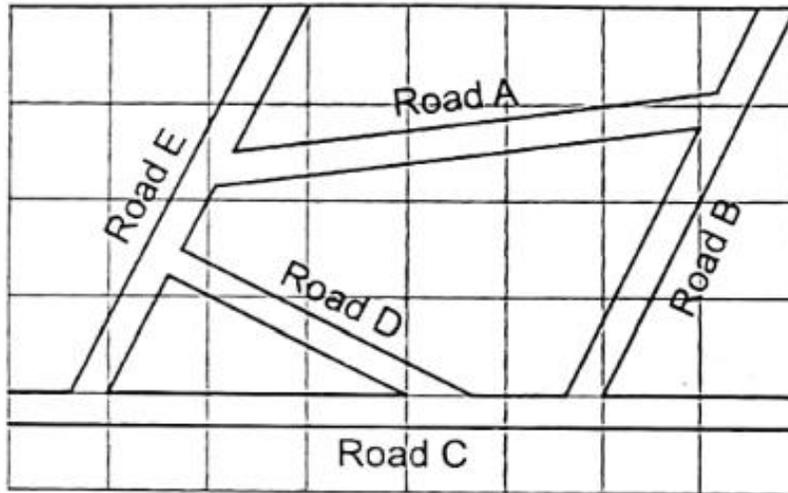
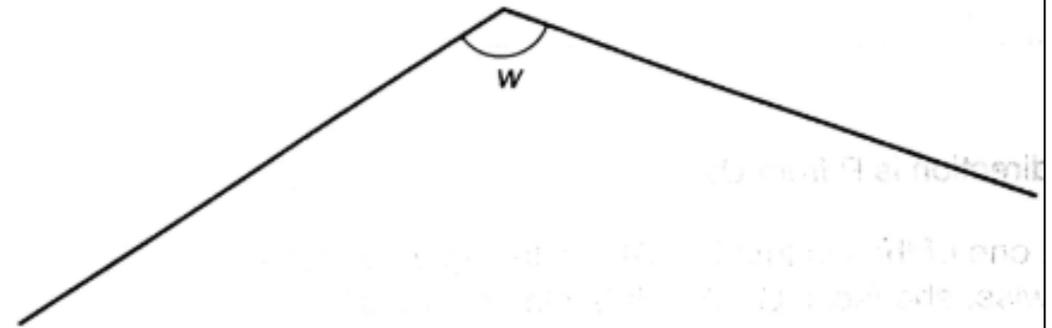(1)   (2)   (3)   (4)

GEOMETRY

The figure shows five roads drawn on a map in a square grid.

16. Name two roads that are parallel to each other.

Measure and write down the size of ∠w in the figure.

GEOMETRY

Seven landmarks on a map of an island are shown in the square grid below.
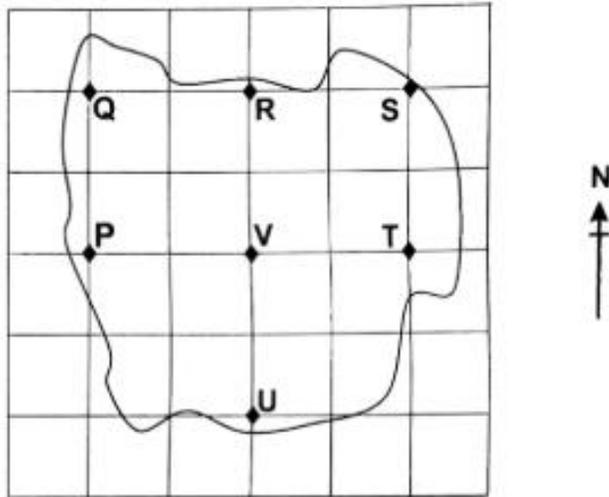
(a)   In which direction is P from U?

(b)   Weili is at one of the landmarks. She is facing V. When she turns 90° clockwise, she faces Q. Which landmark is Weili at?

In the figure, ABD and FED are straight lines and EB is parallel to DC. ∠EFA is a right angle, ∠FAB = 55°, ∠ABC = 115° and ∠DEB = 70°.

(a)   Find ∠ABE.

(b)   Find ∠BCD.
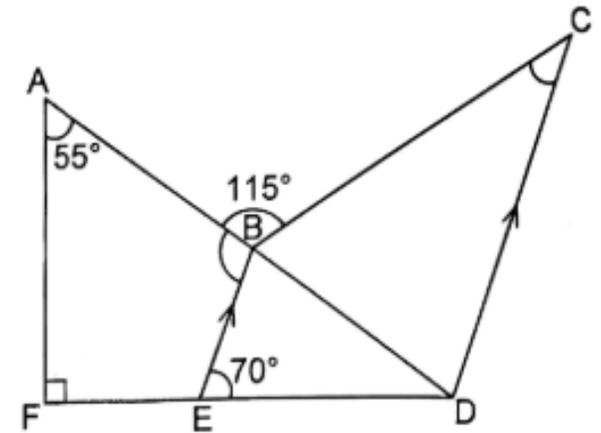
RATIO AND PERCENTAGE

Ming drew three circles to form a figure. The areas of the circles were in the ratio 1 : 4 : 16. She then shaded some parts of the figure as shown.
What fraction of the figure was shaded?
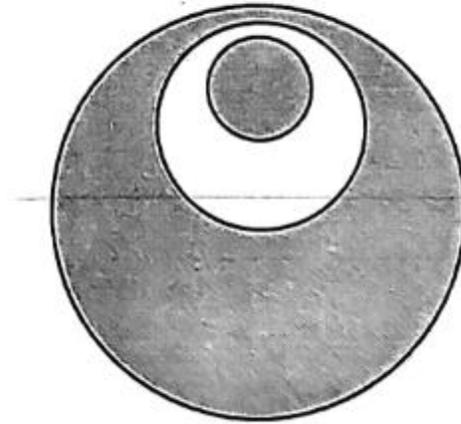
RATIO AND PERCENTAGE
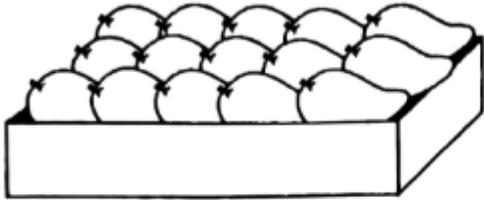
Special Offer

$10 for one box of
15 mangoes

Three friends shared the cost of 60 mangoes in the ratio 1 : 2 : 2.
What was the cost for the smallest share?

RATIO AND PERCENTAGE

What is the price of the watch after adding 7% GST?

$30
(Price before GST)

A caterer prepares chicken wings for some people attending a barbeque.
The ratio of the number of adults to the number of children attending is 2 : 3.
Among the children, the ratio of the number of girls to that of boys is 4 : 1.
A total of 210 chicken wings are prepared so that each adult gets 4 chicken wings and each child gets 2.

(a)   What fraction of the people attending the barbeque are boys?

(b)   How many children are attending the barbeque?

RATE AND SPEED

Gopal took 40 minutes to complete a journey at an average speed of 72 km/h. What was the distance he travelled?

Some students collected a total of 95 kg of cans to raise funds.
They were paid $43.80 for all the cans based on the rates below.
The amount paid for each additional kilogram of cans collected is not shown.

Mass of cans	Rate
First 80 kg	$0.45 per kg
Each additional kg	?

How much were the students paid for each additional kilogram of cans collected?

RATE AND SPEED

The figure shows taps A and B and an empty tank.
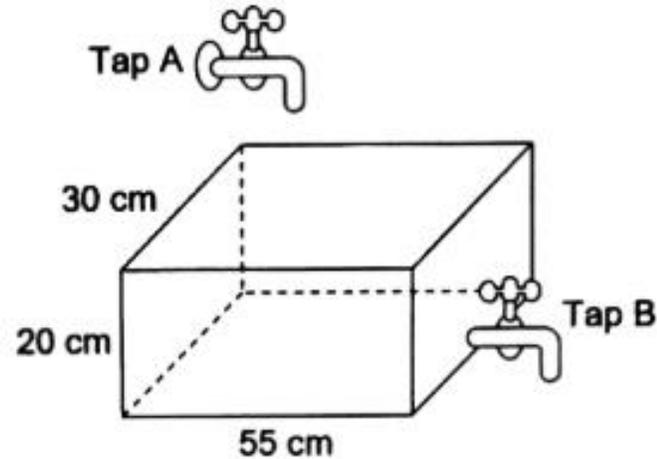
At 2 p.m., tap A was turned on. Water flowed into the tank from tap A at a rate of 4.2 litres per minute. After 5 minutes, tap B was turned on.

At 2.15 p.m., the tank was half filled with water.

(a)   How many litres of water flowed out of tap B in 1 minute?

(b)   At 2.30 p.m., what fraction of the tank was filled with water?

ALGEBRA

Find the value of $\dfrac{15k}{2} - 3k + 1$ when $k = 4$.

Three boys collected plastic bottles for recycling. Jaya collected $2m$ bottles which was half as many as what Kai collected. Kai collected 7 bottles more than Lat. How many bottles did they collect altogether?
Give your answer in terms of m in the simplest form.

How to Support Your Child?

Problem Solving:

STAR Approach

- Encourage the use of STAR approach to solve word problem
- PVPS adopts the STAR approach, a 4-stage structured process, to help our students in developing problem-solving ability

STAR APPROACH

STUDY THE PROBLEM

Actions	Questions
• Read the whole sum • Know what the question wants Identify the knowns and unknowns	• What is this story about? • What is the question asking? • What is the given information? • What is given but not obvious? • What other information do I need?

How to Support Your Child?

Problem Solving - Annotation:

- Highlighting of key words

OR

- Apply CUB to understand the question
  - **C**ircle key numbers.
  - **U**nderline the question.
  - **B**ox/Bracket key information

STAR APPROACH

THINK OF A PLAN

Actions	Questions

• Make sense of each sentence, by
   ○ saying it in your own words
   ○ drawing it out
   ○ organise the information by writing it out
• Think of the strategies to use
   ○ Is there more than one way the problem can be tackled?
	• What is the key piece of information that will give me a clue to solve this sum?
	• What is each sentence telling me?
	• What does each sentence mean?
	• What strategies can I use?
	   ○ Draw a model
	   ○ Make a systematic list
	   ○ Look for patterns
	   ○ Guess and check
	   ○ Work backwards
	   ○ Use before-after concept
	   ○ Break into parts
	   ○ Write a mathematical statement
	   ○ Make suppositions

STAR APPROACH

APPLY THE STRATEGY

Actions	Questions

• Decide on a strategy to use to solve after considering the strengths and weaknesses of all strategies
    ○ What are the benefits if you choose Method 1 over Method 2?
    ○ You need to act cautious of the strategy used. In case it doesn't work, what is your next step?
    ○ How would you feel if you still can't solve the problem after some tries?
• Carry out the plan
    ○ Be resilient
	• Which strategy should I use?
	• What strategy am I confident and comfortable in using?

STAR APPROACH

REVIEW YOUR ANSWER

Actions	Questions
• Look at the answer • Look back at the steps	• Is my answer reasonable? (Does the **number** make sense?) (**N**TUC) • Is the information **transferred** correctly? (N**T**UC) • What is the **unit** required for the answer? (NT**U**C) • Is my **calculation** accurate? (NTU**C**)

How to Support Your Child?

Self-directed Growth:

- Encourage your child to regularly review their work, appreciate the learning value in each mistake, and celebrate the corrections they make.

- Using technology such as **Koobits** and the **Student Learning Space (SLS) – Adaptive Learning System** into daily study routines to provide a personalized learning experience that adapts to your child's evolving needs

Tay Lip Seng
Park View Primary School

0 XP · Lvl 1

Brain Games

Events

Story

Daily Challenge

10 personalized questions per day

Start

Mission

Multiplayer

Assignment

My CPs ▾

K

0
KoKo Credits

Daily Bonus

Dr. Miko is asking you...

Switch to Teacher

X

Planner

Self-Study List

Assignments

Resources

Adaptive Learning

Starred Resources

MOE Library

App Library

User Guide

Assignments

No Announcements

VIEW ALL ANNOUNCEMENTS

l your current Class Groups

ups, go to your Class Groups.

THU
11

How to Support Your Child?

Growth Mindset:

- Embrace Challenges: Teach your child to see struggles in mathematics as opportunities for growth rather than obstacles.

- Celebrate Effort Over Scores: Encourage hard work and persistence, highlighting the process of learning over the final grade.

- Encourage Reflective Thinking: After solving problems, encourage your child to reflect on what they learned and how they can apply it in the future.

- Use Growth-Mindset Language: Use and teach phrases like "I haven't mastered this yet" instead of "I can't do this."

How to Support Your Child?

Revision:

- Strongly encourage your child not to use a calculator for Paper 1 questions to strengthen their mental math capabilities, enabling them to perform basic operations quickly and accurately mentally.

- Encourage your child to write out all mathematical steps clearly. This includes every calculation.

How to Support Your Child?

Revision:

- For questions involving Geometry, students should reference the angles that they are finding.

$\angle BDC$
$= (180° - 102°) \div 2$
$= 39°$

$\angle DBG$
$= 180° - 127° - 39°$
$= \mathbf{14°}$

$\angle BEF = 360° - 298°$
$\qquad = 62°$

$\angle BDF = 62°$

$\angle FDC = 62° - 39°$
$\qquad = \mathbf{23°}$

How to Support Your Child?

Revision:

- Spatial Visualistation:
  - Identify the shapes in the figure
  - State the properties of the shapes in the figure
  - Find similarities between shapes/lines
  - Transform shapes (To rotate, flip, or combine with another shape to form a new figure)

Thank You

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Q&A

Feedback

https://go.gov.sg/pvpsparentws