

P3/P4 Math Parent's Webinar

10TH MARCH 2022



Greendale
PRIMARY SCHOOL



INTRODUCTION

Head of Department Mathematics

Mdm Lily Chan



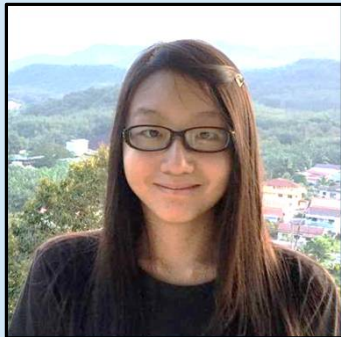
Senior Teacher Mathematics

Mr Yuen Hong Sheng Alfred

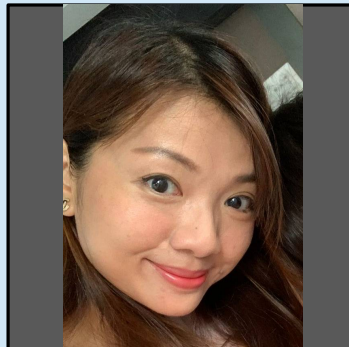


INTRODUCTION

P3-A & P3-C Math Teacher
Ms Lo Zi Ping



P3-B Math Teacher
Mdm Sheena (Term 1) & Ms Gnanes (Term 2 - 4)



P3-D Math Teacher
Mr Yuen Hong Sheng Alfred

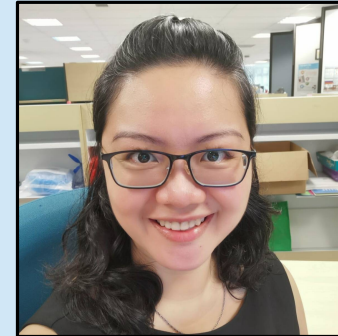


INTRODUCTION

P4-A Math Teacher
Mr Vincent Lim Ban Poh



P4-B & P4-C Math Teacher
Mrs Selena Tan



P4-D Math Teacher
Mr Emmanuel



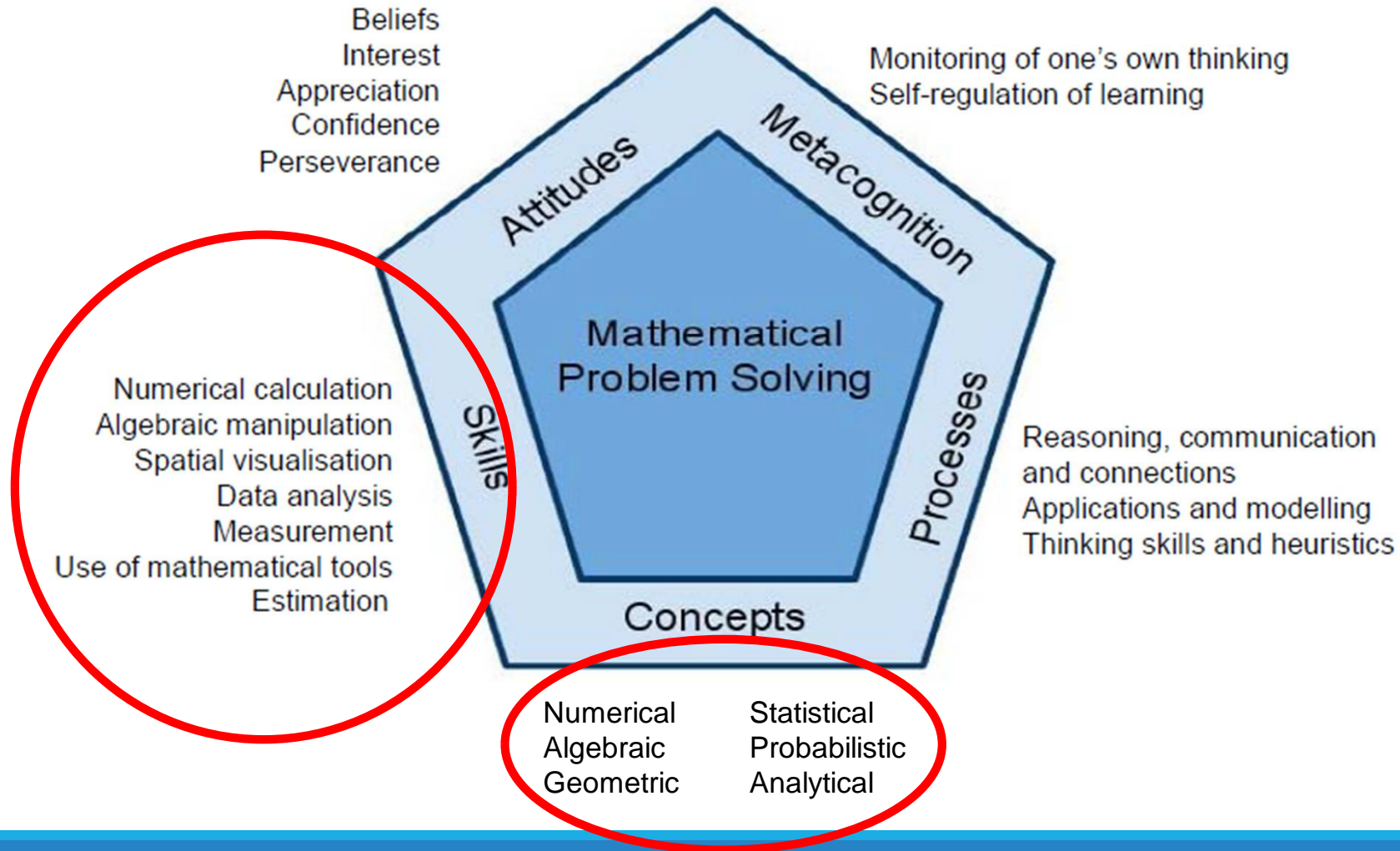
P4-E & P4-F Math Teacher
Mdm Goh Yan Qi



Overview

- ❖ MOE Mathematics Framework
- ❖ Syllabus Organisation
- ❖ Spiral Approach of Primary Mathematics Curriculum
- ❖ School-based support for students' learning
- ❖ Polya's 4 Steps Problem Solving
- ❖ Format of Mathematics Paper
- ❖ Assessment Objectives

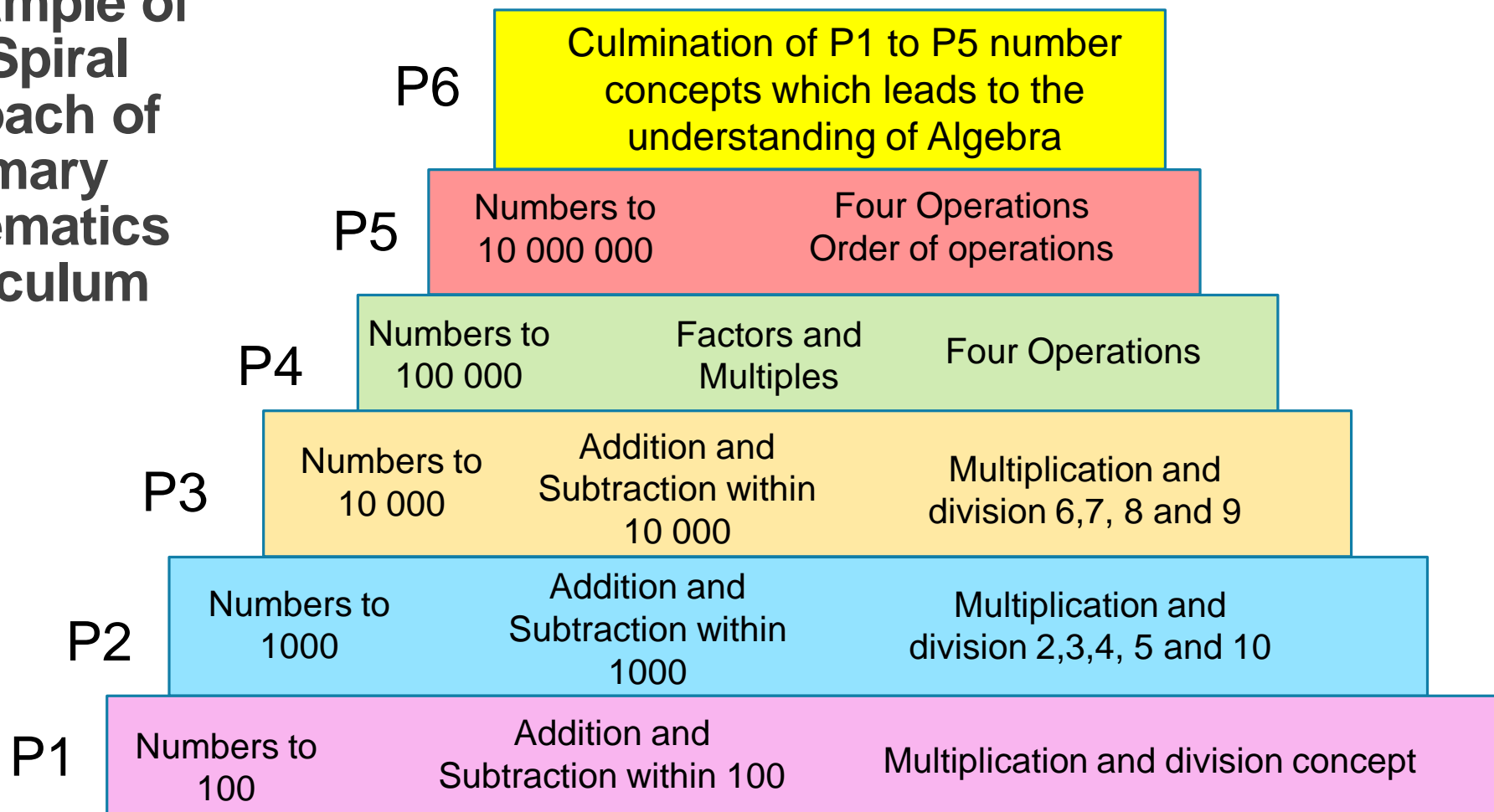
MOE Mathematics Framework



Syllabus Organisation

3 Content Strands + 1 Process Strand		
Number and Algebra	Measurement and Geometry	Statistics
Mathematical Processes		

An example of the Spiral approach of Primary Mathematics Curriculum



School-based Support

- ❖ Textbook and Workbook
- ❖ L-C-E (Learn-Connect-Excel) booklet
 - ❖ reinforce mathematical concepts
 - ❖ expose to different model drawings
- ❖ Heuristics booklet
 - ❖ expose and guide students' learning on the different heuristics/strategies

Polya's 4 Steps Problem Solving

1. Understand

- Identify (Keywords/Topic)
- Interpret (Re-state the Information)
- Infer (Uncover hidden information)

3. Do

- Model / Heuristic
- Equation
- Working
- Answer

2. Plan

Choose a Strategy

- Model Drawing (Key approach)
- Heuristic (Progressive learning across the levels)

4. Check

Is my Solution Reasonable?

Check the following:

- Number
- Units
- Transfer
- Calculation

Format of P3 Mathematics Paper

Item Type	Number of questions	Number of marks per question	Total	Duration
Multiple-choice	17	2	34	1 h 30 min
Short-answer	16	2	32	
Long-answer	2	3	6	
Long-answer	2	4	8	
Total	37	-	80	1 h 30 min

Format of P4 Mathematics Paper

Item Type	Number of questions	Number of marks per question	Total	Duration
Multiple-choice	18	2	36	1 h 30 min
Short-answer	18	2	36	
Long-answer	7	4	28	
Total	43	-	100	1 h 30 min

Assessment Objectives

Cognitive Levels	Standard Math
AO1	recall mathematical facts, concepts, rules and formulae; perform straightforward computations and algebraic procedures
AO2	interpret information; understand and apply mathematical concepts and skills in a variety of contexts
AO3	reason mathematically; analyse information and make inferences; select appropriate strategies to solve problems



<https://www.seab.gov.sg/home/examinations/psle/psle-formats-examined-in-2022>

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P4 Factors and Multiples

Find the common multiple of 3 and 4.

(1) 16

Method 1 (Listing)

(2) 27

Multiples of 3:

3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48

(3) 32

Multiples of 4:

4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48

(4) 48

Ans: (4) 48

P4 Factors and Multiples

Find the common multiple of 3 and 4.

(1) 16

Method 2 (Trial and Error)

(2) 27

$16 \div 3 =$
 $16 \div 4 = 4$ 16 is not a common multiple of 3 and 4

(3) 32

 $27 \div 3 = 9$ 27 is not a common multiple of 3 and 4
 $27 \div 4 =$

(4) 48

 $32 \div 3 =$ 32 is not a common multiple of 3 and 4
 $32 \div 4 = 8$

Ans: (4) 48

 $48 \div 3 = 16$ 48 is a common multiple of 3 and 4
 $48 \div 4 = 12$

P4 Factors and Multiples

Find the common multiple of 3 and 4.

(1) 16

Method 3 (Divide by 1st common multiple of 3 and 4)

(2) 27

1st common multiple of 3 and 4: 12

(3) 32

$16 \div 12 =$ 16 is not a common multiple of 3 and 4

(4) 48

 $27 \div 12 =$ 27 is not a common multiple of 3 and 4

 $32 \div 12 =$ 32 is not a common multiple of 3 and 4

 $48 \div 12 = 4$ 48 is a common multiple of 3 and 4

Ans : (4) 48

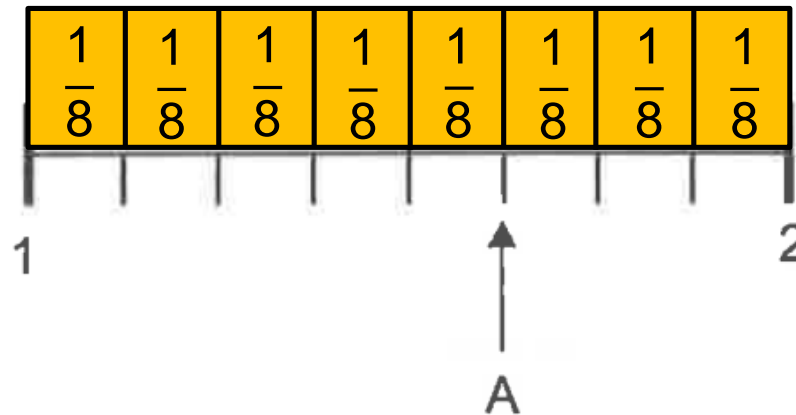
In the number line, what is the mixed number represented by A?

(1) $1\frac{2}{3}$

(2) $1\frac{3}{4}$

(3) $1\frac{5}{7}$

(4) $1\frac{5}{8}$



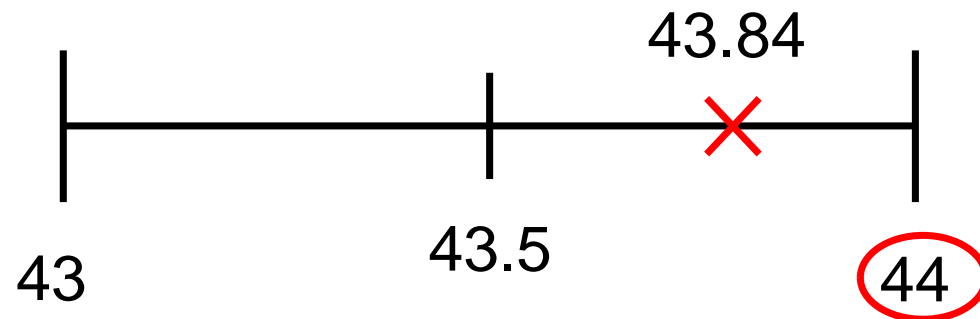
Ans: (4) $1\frac{5}{8}$

A01 Example 3

P4 Decimal

Round 43.84 to the nearest whole number.

- (1) 40
- (2) 43
- (3) 44
- (4) 45



Ans: **(3) 44**

A01 Example 4

P3 Money

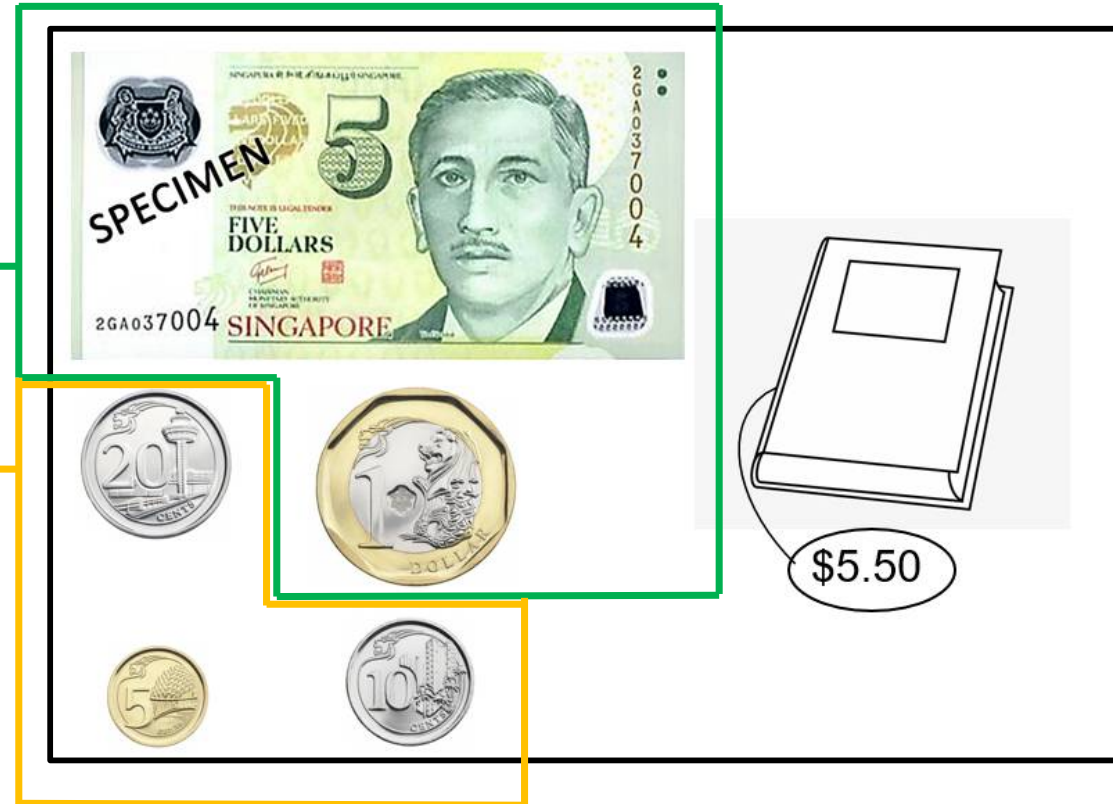
P3 GDPS
EOY 2021

Khairy had a sum of money shown below.
He bought a book as shown.
How much money did he have left?

- (1) \$0.85
- (2) \$1.25
- (3) \$1.85
- (4) \$11.85

\$6

\$0.35



$$\$6.35 - \$5.50 = \$0.85$$

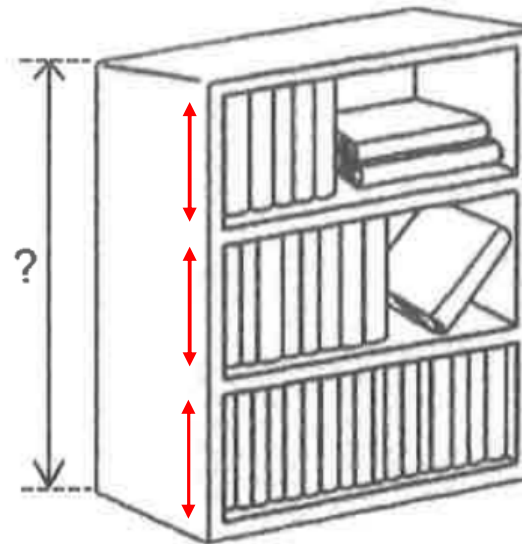
Ans: (1) \$0.85

The diagram shows a bookshelf in a school library.

Which of the following could be the height of the bookshelf?

- (1) 1 cm
- (2) 5 cm
- (3) 1 m
- (4) 5 m

Height of bookshelf
is approximately the
length of 3 books



Ans: **(3) 1 m**

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In the figure shown, ABCD is a square. Find $\angle z$.

(1) 10°

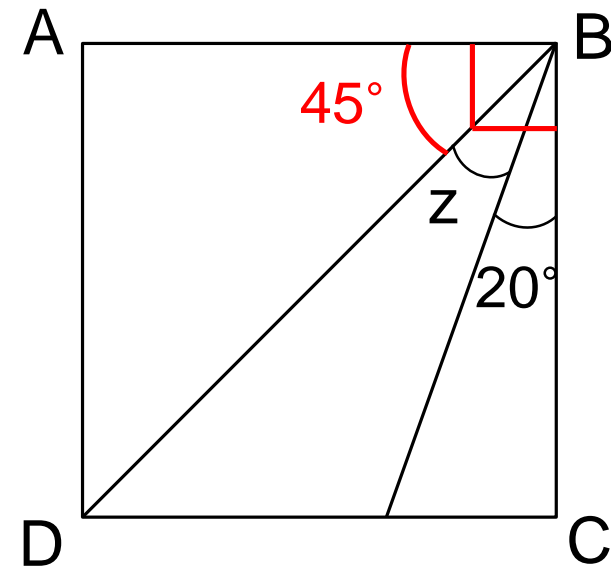
Method 1

(2) 25°

$$90^\circ - 45^\circ - 20^\circ = 25^\circ$$

(3) 45°

(4) 70°



Ans: **(2) 25°**

In the figure shown, ABCD is a square. Find $\angle z$.

(1) 10°

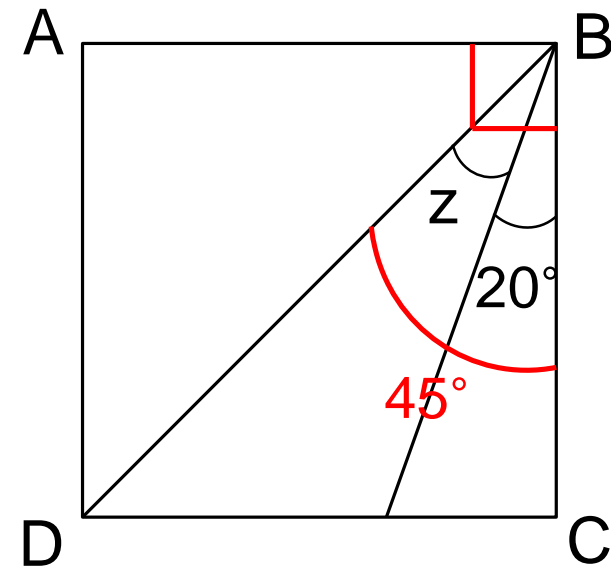
(2) 25°

(3) 45°

(4) 70°

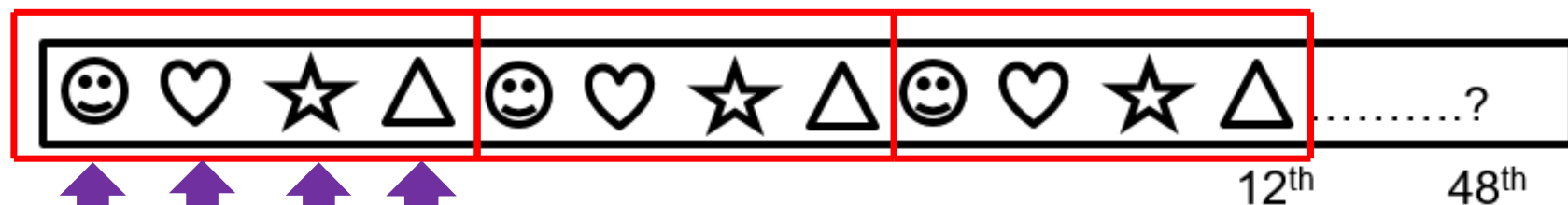
Method 2

$$45^\circ - 20^\circ = 25^\circ$$



Ans: **(2) 25°**

Study the pattern shown below. What is the 48th shape?



(1) ☺

(2) ♥

(3) ☆

(4) △

No remainder

$$48 \div 4 = 12 \text{ (groups)}$$

Ans: (4) △

What is the missing digit in the box below?

	Th	H	T	O
	2	5	<div style="border: 1px solid black; padding: 2px;">1</div>	4
–	1	4	6	2
	1	0	5	2

Red annotations: 4 above the crossed-out 5; 11 above the crossed-out 1; a red diagonal line through the 1 in the tens column.

$$4 \text{ ones} - 2 \text{ ones} = 2 \text{ ones}$$

$$\boxed{11} \text{ tens} - 6 \text{ tens} = 5 \text{ tens}$$

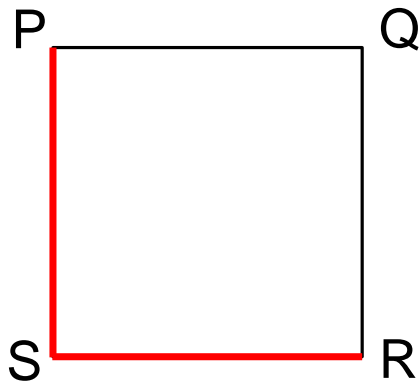
$$6 \text{ tens} + 5 \text{ tens} = 11 \text{ tens}$$

$$\text{Ans} = 1$$

Assessment Objectives

Cognitive Levels	Standard Math
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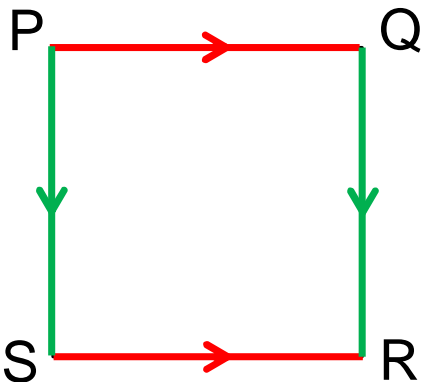
The figure below shows a square PQRS.



The statement below is either true or false from the information given. For the statement, put a tick (✓) to indicate your answer.

Statement	True	False
<u>Length of line PS</u> is <u>equal</u> to the <u>length of line SR</u> .	✓	

The figure below shows a square PQRS.



The statement below is either true or false from the information given. For the statement, put a tick (✓) to indicate your answer.

Statement	True	False
<u>The square</u> has <u>only 1 pair</u> of <u>parallel sides</u> .		✓

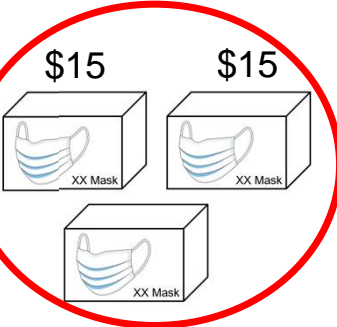
A03 Example 2

P3 / P4 Whole numbers

Shop A and Shop B sold similar face masks.

Below are the prices of face masks sold in Shop A and Shop B.

Pay \$30 only

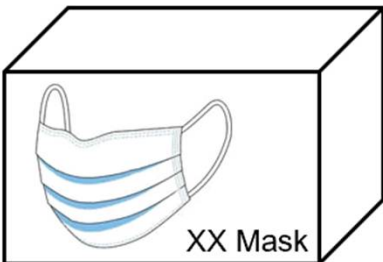


\$15 \$15

XX Mask XX Mask

XX Mask

Shop A



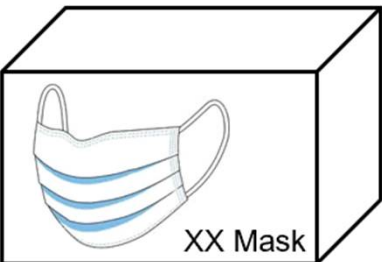
XX Mask

1 box of face masks costs \$15

Promotion:

Buy 3 boxes of face masks for the price of 2.

Shop B



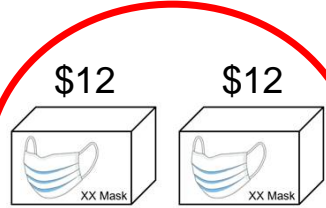
XX Mask

1 box of face masks costs \$12

Promotion:

Buy 2 boxes of face masks and get \$10 off.

Pay \$14 only

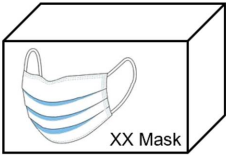


\$12 \$12

XX Mask XX Mask

$\$12 + \$12 - \$10$

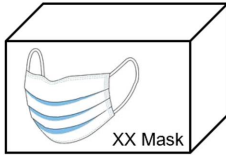
Shop A



1 box of face masks costs \$15

Promotion:
Buy 3 boxes of face masks
for the price of 2.

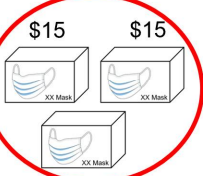
Shop B



1 box of face masks costs \$12

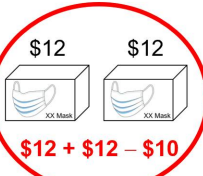
Promotion:
Buy 2 boxes of face masks
and get \$10 off.

Pay \$30 only



\$15 \$15

Pay \$14 only



\$12 \$12

~~\$12~~ + ~~\$12~~ - \$10

The statement below is either true or false from the information given. For the statement, put a tick (✓) to indicate your answer.

Statement	True	False
John wants to <u>buy 3 boxes of face masks</u> .		✓
It is <u>cheaper to buy face masks from Shop A</u> .		
<div><p>Shop A</p><p>$\\$15 + \\$15 = \\$30$ (3 boxes)</p></div> <div><p>Shop B</p><p>$\\$12 + \\$12 - \\$10 = \\14 (2 boxes)</p><p>$\\$14 + \\$12 = \\$26$ (3 boxes)</p></div>		

Heuristics-based Questions

**Use a diagram/
model**

**Systematic
Listing**

**Working
backwards**

**Simplify the
problem**

**Guess-and-
check**

Act it out

Before-after

Supposition

**Look for
Patterns**

**Restate the
problem**

A03 Example 3

P3 / P4 Whole numbers

L-C-E Worksheet

Three children collected a total of 455 books. Carl collected 25 more books than Denise. Evi collected 42 more books than Carl.

How many books did Evi collect?



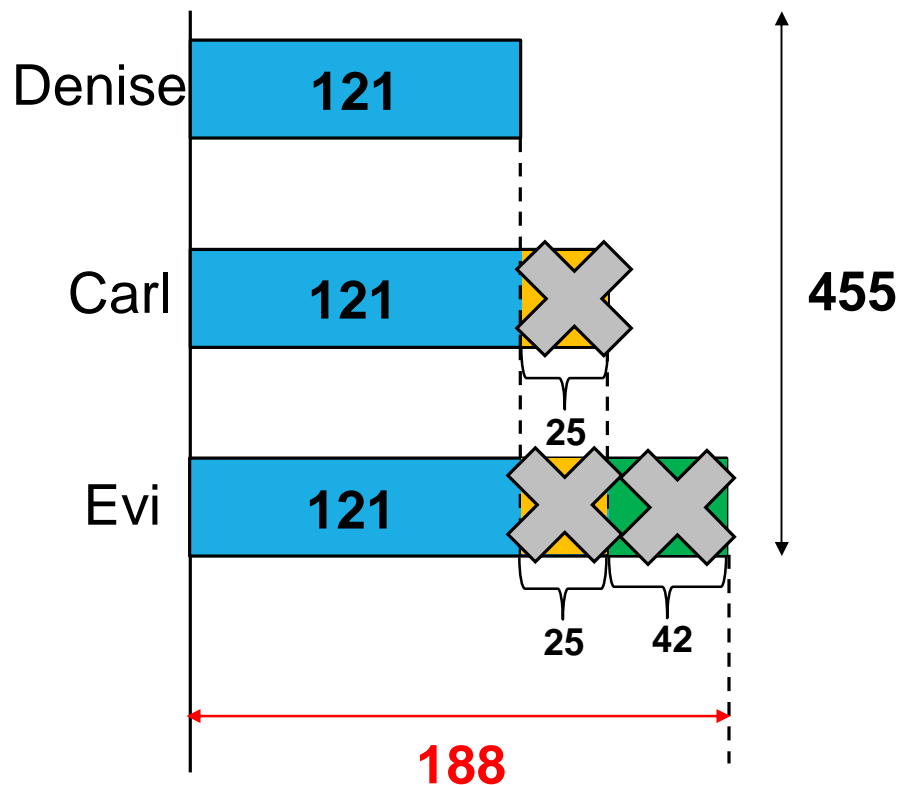
A03 Example 3

P3 / P4 Whole numbers

L-C-E Worksheet

Three children collected a total of 455 books. Carl collected 25 more books than Denise. Evi collected 42 more books than Carl.

How many books did Evi collect?



$$455 - 25 - 25 - 42 = 363$$

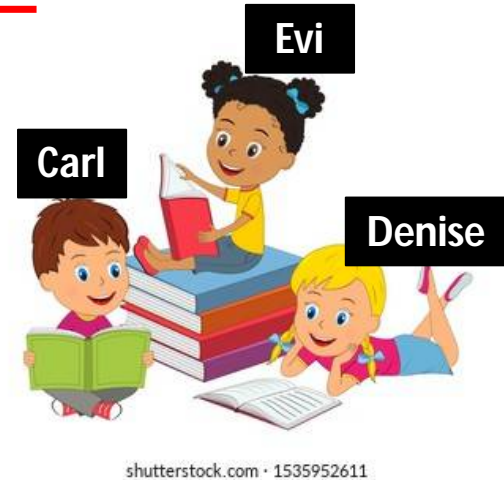
$$3 \text{ u} = 363$$

$$1 \text{ u} = 363 \div 3 \\ = 121$$

$$121 + 25 + 42 = 188$$

Evi collected 188 books.

Ans: 188

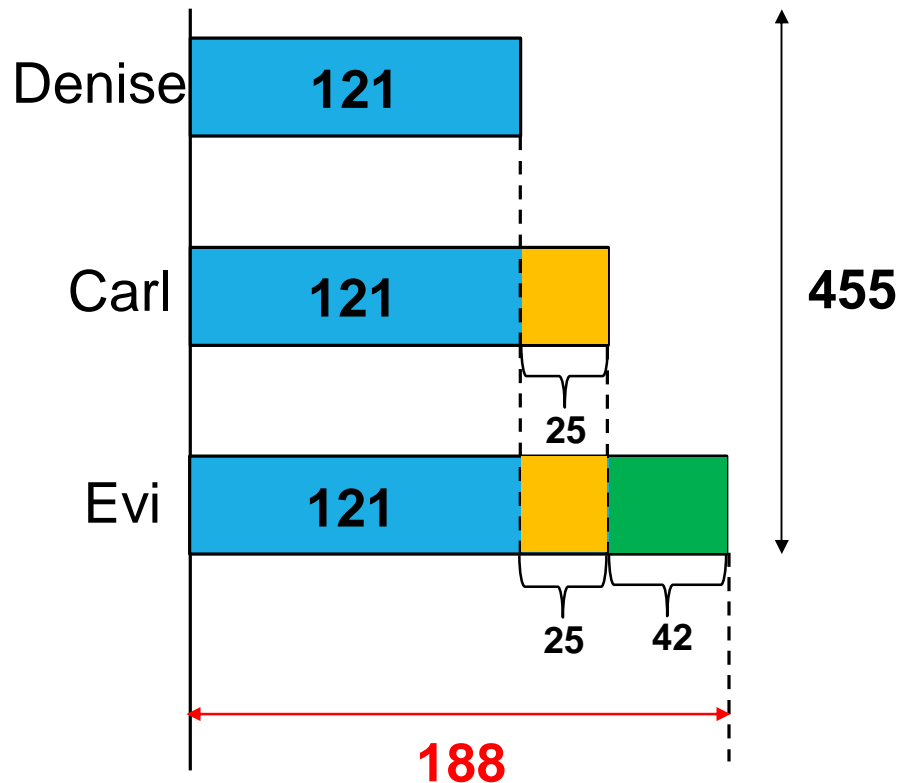


A03 Example 3

P3 / P4 Whole numbers

Three children collected a total of 455 books. Carl collected 25 more books than Denise. Evi collected 42 more books than Carl.

How many books did Evi collect?



Check:

121 books (Denise)

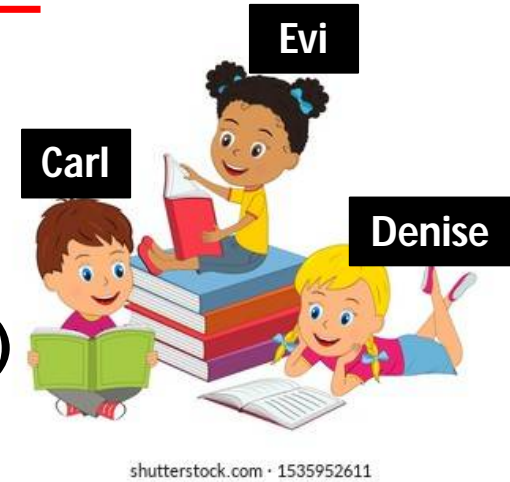
$121 + 25 = 146$ books (Carl)

188 books (Evi)

$121 + 146 + 188 = 455$ books (total)

$188 - 146 = 42$

Evi collected 42 more books than Carl.



Heuristics-based Questions

**Use a diagram/
model**

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A03 Example 4

P3/4 Whole Numbers

Before

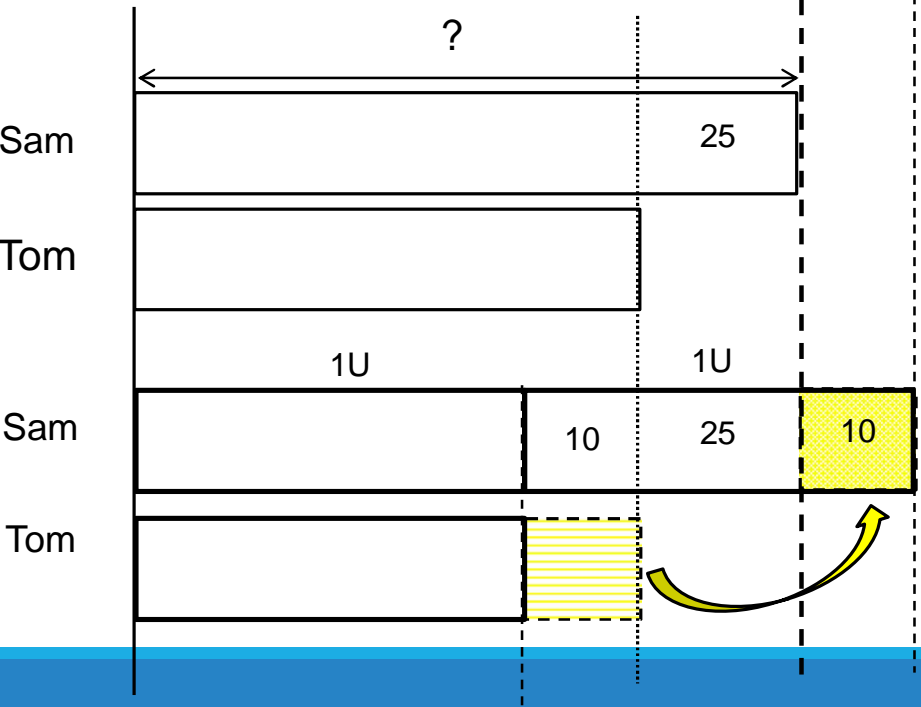
Change

Sam had 25 more marbles than Tom at first. After Tom gave 10 marbles to Sam, the number of marbles that Sam have now is twice the number of marbles that Tom had left. How many marbles did Sam have at first?

After

Before

After



1 unit = 10 + 25 + 10

= 45

2 units = 45 × 2

= 90

Sam at first → 90 – 10

= 80

Sam had 80 marbles at first.

Heuristics-based Questions

**Use a diagram/
model**

**Systematic
Listing**

**Working
backwards**

**Simplify the
problem**

**Guess-and-
check**

Act it out

Before-after

Supposition

**Look for
Patterns**

**Restate the
problem**

A03 Example 4

Math Process: P3/P4 Whole Numbers

A box of grapes costs \$11 and a box of peaches costs \$15. Jermaine bought 17 boxes of fruits and paid a total of \$199. How many boxes of grapes did Jermaine buy?

Guess and check → Min of 5 columns

Total boxes of fruits (17)	No. of boxes of grapes x \$11	No. of boxes of peaches x \$15	Total cost (\$199)	Check
17 ←	8 x \$11 = \$88	9 x \$15 = \$135	\$88 + \$135 = \$223	x
17	9 x \$11 = \$99	8 x \$15 = \$120	\$99 + \$120 = \$219	x
17	11 x \$11 = \$121	6 x \$15 = \$90	\$121 + \$90 = \$211	x
17	13 x \$11 = \$143	4 x \$15 = \$60	\$143 + \$ 60 = \$203	x
17	14 x \$11 = \$154	3 x \$15 = \$45	\$154 + \$45 = \$199	✓

By increasing the grapes the total cost seem to get nearer to \$199

She bought 14 boxes of grapes

Heuristics-based Questions

**Use a diagram/
model**

**Systematic
Listing**

**Working
backwards**

**Simplify the
problem**

**Guess-and-
check**

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A03 Example 5

C1 Math Process: P4 Whole Numbers

C2

Miss Jen has less than 25 sweets to give to her pupils. When she packs the sweets into bags of 6, she would have 4 sweets left. → extra 4 (which means + 4)

When she packs the sweets into bags of 9, she would need 5 more sweets. → C3 need 5 (which means - 5)

- (a) How many pupils were there?
- (b) When Miss Jen wants to pack her sweets equally so that each pupil will have 15 sweets in the end, how many more sweets will she need?

Systematic Listing (a)

Number of pupils	1	2	3	4
Multiples of 6	6 ↓ +4	12 ↓ +4	18 ↓ +4	24 ↓ +4
Multiples of 6 plus 4	10	16	22	28
Multiples of 9	9 ↓ -5	18 ↓ -5	27 ↓ -5	36 ↓ -5
Multiples of 9 minus 5	4	13	22	31

one bag 15

- b) Now that we know
No. of pupils → 3
No. of sweets → 22

How many more sweets will she needs when she wants to give each of them 15 sweets?

No. of sweets needed → $3 \times 15 = 45$
No. of sweets shot off → $45 - 22 = 23$



Feedback



<https://tinyurl.com/P3P4MATHGDPS2022>

