

# PSLE FOUNDATION MATHS

## PSLE Foundation Mathematics Examination Format

The examination consists of two written papers comprising three booklets.

Paper	Booklet	Item Type	Number of questions	Number of marks per question	Weighting	Duration
1	A	Multiple-choice	10	1	10%	1 hr
			10	2	20%	
2	B	Short-answer	10	2	20%	1hr 15 min
		Short-answer	10	2	20%	
		Structured	8	3,4,5	30%	
Total			48	-	100%	2 h 15 min

### Notes

- Both papers will be scheduled on the same day with a break between the two papers.
- Paper 1 comprises two booklets. The use of calculators is **not** allowed.
- Paper 2 comprises one booklet. The use of calculators is allowed.

### Item Types

#### Multiple-choice Question

For each question, four options are provided of which only one is the correct answer. A candidate has to choose one of the options as his correct answer.

#### Short-answer Question

For each question, a candidate has to write his answer in the space provided. Any unit required in an answer is provided and a candidate has to give his answer in that unit.

#### Structured Question

For each question, a candidate has to show his method of solution (working steps) clearly and write his answer(s) in the spaces provided.

### HELPFUL TIPS

When solving word problems, let's remember the RUBIKS Cube

**R**ead for **U**nderstanding  
**B**reak into chunks  
 Look for **I** mportant information  
 Thin **K** of the appropriate method  
 Per **S** evere



### Sample question 1

#### Topic : Whole number

Q : Sally has \$2 541. Andy has \$435 more than her. How much do both of them have? **(2 marks)**

$$2541 + 435 = 2976 \quad (\text{M0})$$

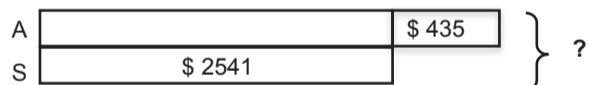
Answer : \$2976 (A0)

#### Common mistake

Some pupils do not read the final question carefully, thus did not answer the question. They usually stop at the following step (shown above), quite forgetting to add up the number of Andy's apples to get the total.

\*\* It is recommended that models are used to solve questions that have "more than" or "less than".

#### Correct Working



$$\begin{aligned} \$2541 + \$435 &= \$2976 \quad (\text{Andy's } \$) \\ \$2541 + \$2976 &= \$5517 \quad (\text{total } \$) \end{aligned}$$

M1 (mark given for correct method)  
 A1 (mark given for correct answer)

Answer: \$ 5517 A1 (mark given for correct answer)

The words in the brackets help to remind pupils what they are finding at each step.

### Sample question 2

#### Topic : Whole number

Q : John has 456 apples. He has 35 more apples than Alan. How many apples do both of them have? **(2 marks)**

$$\begin{aligned} 456 + 35 &= 491 \\ 491 + 456 &= 947 \quad (\text{M0}) \end{aligned}$$

Answer : 947 apples (A0)

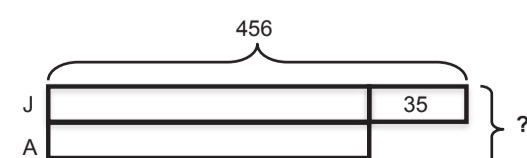
#### Common mistake

Pupils jump into the question without proper understanding of the question. They scan through the question quickly by picking out key words and assume that "more" => add.

#### Correct Working

Q : John has 456 apples. He has 35 more apples than Alan. How many apples do both of them have?

From the model, the pupils can see that they need to **SUBTRACT** and not add in order to find the number of apples Alan has.



$$\begin{aligned} 456 - 35 &= 421 \quad (\text{Alan}) \\ 421 + 456 &= 877 \quad (\text{both}) \end{aligned}$$

Answer : 877 apples A1

### Sample question 3

#### Topic : Whole number

Q : There were 1140 people at an exhibition. If there were 180 more adults than children, find the number of adults who attended the exhibition. **(3 marks)**

$$\begin{aligned} 1140 \div 2 &= 570 \\ 570 + 180 &= 750 \quad (\text{M0}) \end{aligned}$$

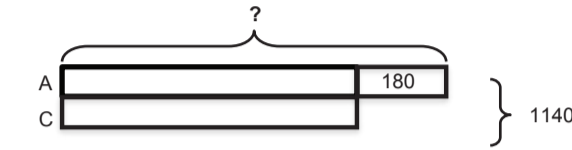
Answer : 750 adults (A0)

#### Common mistake

Pupils do not like to draw models when solving problem sums. They assumed that the number of adults and children are the same in the beginning. Because there are 180 more adults, they add this number to the first answer.

#### Correct working

From the model, the pupils can see that the number of children and adults are NOT equal. They need to subtract the "extra" (180) before getting two equal units.



$$\begin{aligned} 1140 - 180 &= 960 \quad (\text{2 units}) \\ 960 \div 2 &= 480 \quad (\text{1 unit} \rightarrow \text{children}) \end{aligned}$$

$$480 + 180 = 660 \quad (\text{adults}) \quad \text{M1}$$

Answer : 660 adults A1

### Sample Question 4

#### Topic : Percentage

Q : Leon had \$300. After buying a toy, he had \$90 left. What percentage of his money did he spend? **(2marks)**

$$\frac{90}{300} \times 100\% = 30\% \quad (\% \text{ left or spend ?}) \quad (\text{M0})$$

Answer: 30% (A0)

What do I need to find first? Do I know how much Leon spend?



#### Common mistake

Pupils see these two numbers and immediately used it for computation. They did not realize that the answer that they get is not what is required by the question.

#### Correct working

##### Method 1:

$$\begin{aligned} 300 - 90 &= 210 \quad (\text{amount spent}) \\ \frac{210}{300} \times 100\% &= 70\% \quad (\% \text{ spent}) \end{aligned}$$

Answer: 70% A1

##### Method 2:

$$\begin{aligned} \frac{90}{300} \times 100\% &= 30\% \quad (\% \text{ left}) \\ 100\% - 30\% &= 70\% \quad (\% \text{ spent}) \end{aligned}$$

Answer: 70% A1

### Sample Question 5

#### Topic : Percentage

Q : A tank has a capacity of 1 800 ml. 30% of the tank is filled with water. How much more water is needed to fill the tank to the brim? Express your answer in litres. **(3 marks)**

$$\frac{30}{100} \times 1800 = 540 \quad \text{M1}$$

$$1800 - 540 = 1260 \quad \text{M1}$$

Answer : 1260 l (A0)

#### Common mistake

Pupils are not attentive to the units required by the question. They simply place the answer that they had derived from the working to the answer line. They forget to convert the 1260 ml to litres.

#### Correct Working

##### Method 1:

$$\frac{30}{100} \times 1800 = 540 \text{ ml} \quad \text{M1}$$

$$1800 - 540 = 1260 \text{ ml} \quad \text{M1}$$

$$1260 \div 1000 = 1.26 \text{ l} \quad \text{A1}$$

##### Method 2:

$$100\% - 30\% = 70\% \quad \text{M2}$$

$$\frac{70}{100} \times 1800 = 1260 \text{ ml}$$

$$1260 \div 1000 = 1.26 \text{ l} \quad \text{A1}$$

Answer: 1.26 l (A0)

### Sample Question 6

#### Topic : Percentage

Q : 40% of the sandwiches are egg sandwiches. 30% of the sandwiches are tuna sandwiches. The remaining 450 sandwiches are smoked salmon sandwiches. What is the total number of sandwiches? **(4 marks)**

$$40\% + 30\% = 70\% \quad \text{M1}$$

$$100\% - 70\% = 30\% \quad \text{M1}$$

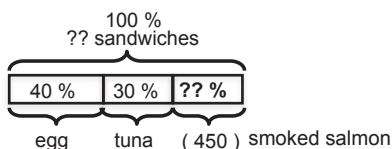
$$\frac{30}{100} \times 450 = 135$$

Answer : 135 sandwiches (A0)

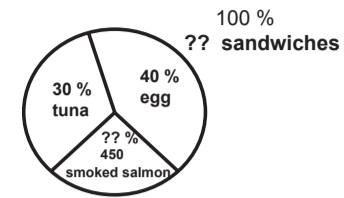
#### Common mistake

Due to lack of understanding of the question, the final step shown is wrong. Pupils did not realise that the 450 salmon sandwiches is represented by 30% of the sandwiches.

#### Correct working



This question can be represented in pictorial form ; model or pie chart



$$40\% + 30\% = 70\% \quad (\% \text{ of egg \& tuna})$$

$$100\% - 70\% = 30\% \quad (\% \text{ smoked salmon}) \quad \text{M1}$$

$$30\% \rightarrow 450 \quad (\text{number of smoked salmon}) \quad \text{M1}$$

$$1\% \rightarrow 450 \div 30 = 15$$

$$100\% \rightarrow 15 \times 100 = 1500 \quad \text{M1}$$

Answer: 1500 sandwiches A1

### Sample Question 7

#### Topic : Fraction

Q : Salimah had some stamps. She gave away  $\frac{3}{8}$  of her stamps and had 120 stamps left. How many stamps did she have at first? **(3 marks)**

$$\frac{3}{8} \times 120 = 45 \quad (\text{M0})$$

Answer: 45 (A0)

#### Common mistake

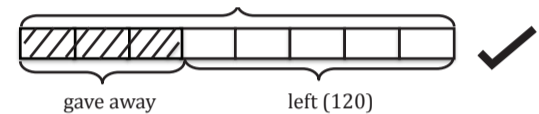
Pupils get the idea that the word "of"  $\rightarrow$  multiply. Thus, they simply take the product of both the fraction and whole number. Failure to draw model also results in the above steps being shown.

#### Correct Working

$$\frac{3}{8} \text{ of stamps (gave away)}$$

$$\frac{3}{8} \times ?? = ?? \quad \text{X}$$

Use this method ONLY if the total no. of stamps is given.



Use of model and unitary method

$$\begin{aligned} 5 \text{ units} &\rightarrow 120 \\ 1 \text{ unit} &\rightarrow 120 \div 5 = 24 \\ 8 \text{ units} &\rightarrow 24 \times 8 = 192 \end{aligned}$$

Answer : 192 stamps A1

### Sample Question 8

#### Topic : Fraction

Q : David had \$840. He spent  $\frac{1}{5}$  of it on his lunch and  $\frac{3}{8}$  of the remainder on a T-shirt. How much money had he left? **(5 marks)**

$$\frac{1}{5} + \frac{3}{8} = \frac{8}{40} + \frac{15}{40} = \frac{23}{40} \quad (\text{M0})$$

$$\frac{23}{40} \times 840 = 483$$

$$840 - 483 = 357$$

Answer: \$357 (A0)

#### Common mistake

Pupils tend to overlook the word "remainder", thus adding up the two fractions. This is incorrect as the "denominators" are different.

#### Correct Working

##### Method 1:

$$(1) \frac{1}{5} \times 840 = 168 \quad (\text{lunch}) \quad \text{M1}$$

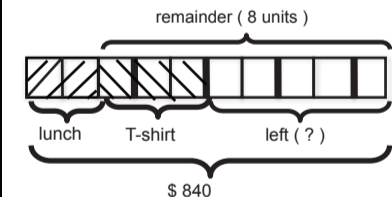
$$(2) 840 - 168 = 672 \quad (\text{remainder}) \quad \text{M1}$$

$$(3) \frac{3}{8} \times 672 = 252 \quad (\text{T-shirt}) \quad \text{M1}$$

$$(4) 672 - 252 = \$420$$

Answer : \$420 A1

##### Method 2:



$$10 \text{ units} \rightarrow 840 \quad \text{M2}$$

$$1 \text{ unit} \rightarrow 840 \div 10 = 84 \quad \text{M1}$$

$$5 \text{ units} \rightarrow 84 \times 5 = 420 \quad \text{M1}$$

Answer : \$420 A1

### Sample Question 9

#### Topic : Fraction

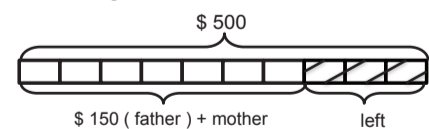
Q : Rani had \$500. She gave \$150 to her father and some money to her mother. She then had  $\frac{3}{10}$  of her money left. How much money did she give to her mother? **(4 marks)**

$$500 - 150 = 350 \quad (\text{M1})$$

$$\frac{3}{10} \times 350 = 105 \quad (\text{M0})$$

Answer : \$105 (A0)

#### Correct Working



#### Common mistake

Pupils do not read the question carefully, thus making the mistake in the second step.

##### Method 1:

$$500 - 150 = 350 \quad \text{M1}$$

$$\frac{3}{10} \times 500 = 150 \quad (\$ \text{ left}) \quad \text{M1}$$

$$350 - 150 = 200 \quad \text{M1}$$

Answer : \$200 A1

##### Method 2:

$$10 \text{ units} \rightarrow 500$$

$$1 \text{ unit} \rightarrow 500 \div 10 = 50$$

$$3 \text{ units} \rightarrow 150 \quad (\$ \text{ left}) \quad \text{M1}$$

$$500 - 150 = 350 \quad \text{M1}$$

$$350 - 150 = 200 \quad \text{M1}$$

Answer : \$200 A1