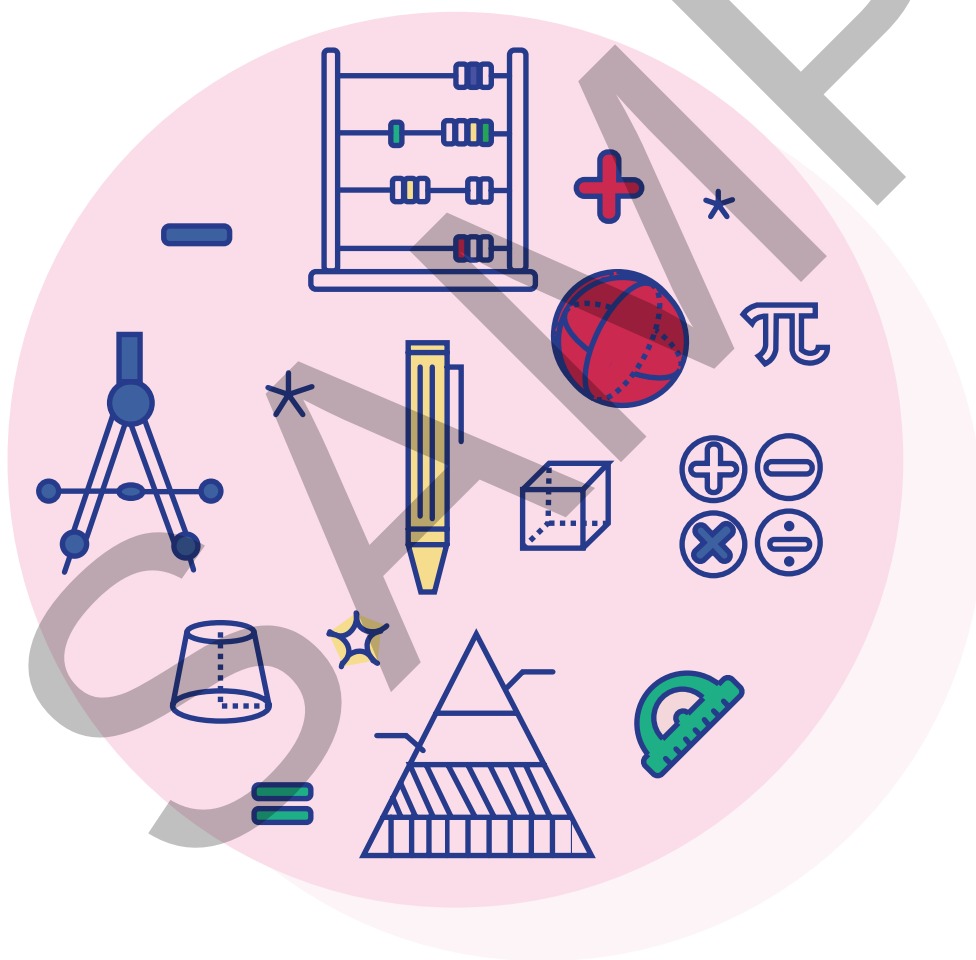


ESSENTIAL SELECTIVE

MATHEMATICAL REASONING

5 Mathematical Reasoning Test Papers



RAY LEE | JIMMY LIU

BOOK **2**

To Cookie, my light,
and to Phoebe who I hope
can one day figure out all the questions in this book.

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Lee, Ray and Liu, Jimmy

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1 What is the cheapest buy at this fruit store?

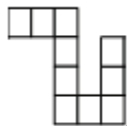
- A 1kg of watermelons for \$5
- B $1\frac{1}{2}$ kg of watermelons for \$8
- C 750g of watermelons for \$4
- D 500g of watermelons for \$3
- E 100g of watermelons for \$0.60

2 Round off to the nearest thousand before adding the values.

Then, $24690 + 1495 = ?$

- A 25000
- B 26185
- C 26000
- D 27000
- E 21000

3 Step 1



5 cm long

Step 2



8 cm long

Step 3



11 cm long

In which step will the figure be 1.58 m long?

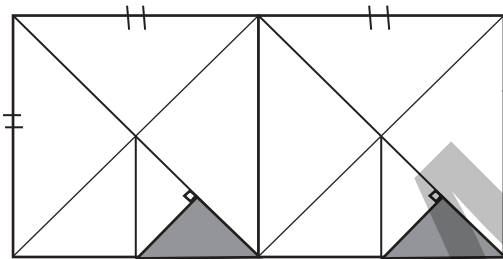
- A 49
- B 50
- C 51
- D 52
- E 53

- 4 The Mynes Verithia is a plant which can live in a certain difference in temperature, within any temperature range above freezing.

If it can only survive in a temperature difference of 10.45°C , which of the following would the plant survive in?

- A $-1.00^{\circ}\text{C} \rightarrow 9.5^{\circ}\text{C}$
 B $6.65^{\circ}\text{C} \rightarrow 17.05^{\circ}\text{C}$
 C $26.54^{\circ}\text{C} \rightarrow 36.99^{\circ}\text{C}$
 D $356.35^{\circ}\text{C} \rightarrow 375.78^{\circ}\text{C}$
 E $-6.00^{\circ}\text{C} \rightarrow 4.45^{\circ}\text{C}$

- 5 What is the proportion of the shaded area with respect to the large rectangle?



- A $\frac{1}{4}$
 B $\frac{1}{8}$
 C $\frac{1}{12}$
 D $\frac{2}{12}$
 E $\frac{1}{16}$

- 6 Mr Huang is 42 and his son John is 17.

How old will Mr Huang be when John is half his father's age?

- A 50
- B 54
- C 58
- D 60
- E 70

- 7 Adam is drawing a sector graph.

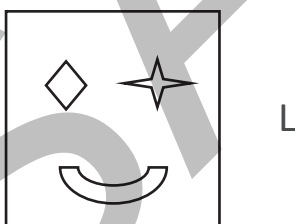
It will show how the 27 children in his class come to school.

18 of the children are dropped off by their parents.

What angle should Adam use for the sector that shows the students who are dropped off by their parents?

- A 180°
- B 240°
- C 270°
- D 90°
- E 45°

- 8 In Blockworld, all the inhabitants have blocks for heads. One particular individual, has a head that looks like this (the L denotes the left-side of his face).



Choose the correct statement for when he looks in the mirror:

- A the star will be on the left side of his face.
- B his whole face will be upside down.
- C the diamond will be on the right side of his face.
- D the star will be on the right side of his face.
- E none of above

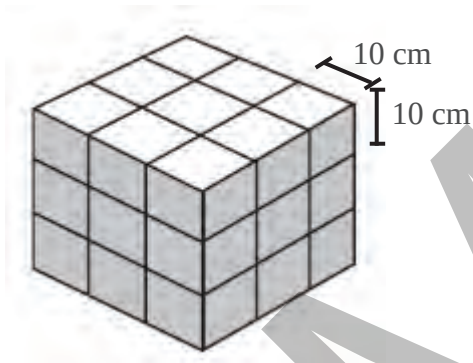
- 9 In the Blue and Violet classes, there are 16 students in class Blue and 24 students in class Violet.

The average mark for a maths test in class Blue was 80% and in class Violet is 90%.

What would be the average mark of two classes?

- A 90%
- B 86%
- C 82%
- D 85%
- E 80%

- 10 What will be the volume of the following cube if the middle blocks on each face and the corners of each face are removed?



- A 12000cm^3
- B 13000cm^3
- C 14000cm^3
- D 15000cm^3
- E 16000cm^3

Selective Practice Test Answers

Mathematical Reasoning 6

Question	Answer	Explanation
1	A	Option A is \$5/kg, option B is \$5.33/kg, option C is \$5.33/kg, option D is \$6/kg and option E is \$6/kg
2	C	$25\,000 + 1000 = 26\,000$.
3	D	Step 1 = 5cm Step 2 = 8cm Pattern: $\text{Step} \times 3 + 2 = \text{length}$ If length is 158, $\text{Step} = 52$
4	C	A => not included in specified range B => diff of 10.4 C => diff of 10.45 D => diff of 10.43 E => not included in specified range
5	E	The shaded area is $2/32 = \mathbf{1/16}$
6	A	Trial and error: When Mr Huang is 50 ($42+8$), John is $17+8 = 25$, which is half of 50.
7	B	$18/27 = 2/3$. $2/3 * 360 = \mathbf{240}$
8	D	Mirrors reflect things along a vertical axis, meaning we flip it horizontally. The star will therefore, now be on the right side of his face.
9	B	$(16 \times 80 + 24 \times 90)/(16 + 24) = 86\%$
10	B	There are 13 cubes left. $13 \times 1000 = 13000$