Junior Maths Mastery Challenge Sample

Paper B

Section A

Questions 1 to 5 carry 3 marks each.

1. Find the value of the following.

   1 + 2 + 3 + … + 7 + 8 + 9 + 8 + 7 + … + 3 + 2 + 1

   (A) 72 (B) 81 (C) 99

   (D) 109 (E) None of the above

2. Each shape below represents a different number.

   △ × □ = 15

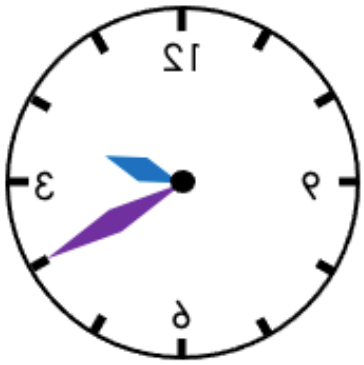
   □ × ○ = 35

   What is the value of △ × ○ ?

   (A) 10 (B) 14 (C) 20

   (D) 21 (E) None of the above

3. Lina started doing her homework at 11:30 am. When she finished, she saw the reflection of her wall clock through a mirror as shown. How many minutes did she spend on her homework?



Afternoon

(A) 150 min (B) 160 min (C) 170 min

(D) 250 min (E) None of the above

4. Study the pattern below.

1, 10, 2, 20, 4, 40, ...

What number comes next?

(A) 7 (B) 8 (C) 16

(D) 22 (E) 35

5. There are 8 lights placed every 10 metres apart along a path in a garden. There is a light at each end of the path. What is the length of the path?

(A) 50 m (B) 60 m (C) 70 m

(D) 80 m (E) None of the above

Questions 6 to 10 carry 4 marks each.

6. A bus left the terminal with passengers.

   At the 1st bus stop, 16 passengers got off and 5 passengers got on.

   At the 2nd bus stop, 7 passengers got off and 12 passengers got on.

   There were 46 passengers on the bus when it left the 2nd bus stop. How many passengers were on the bus when it left the terminal?

(A) 40 (B) 42 (C) 44

(D) 46 (E) None of the above

7. Ella packs 40 cupcakes equally into boxes. Each box has the same number of rows of cupcakes. Each row has 5 cupcakes. What is the possible number of boxes she uses?

(A) 3 (B) 4 (C) 5

(D) 6 (E) 7

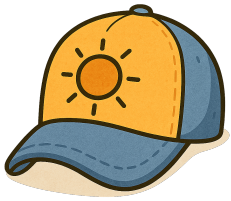
8. Ben has 20 more fifty-cent coins than one-dollar coins. He exchanges $4 worth of fifty-cent coins for one-dollar coins. How many more fifty-cent coins than one-dollar coins does he have in the end?

(A) 4 (B) 8 (C) 12

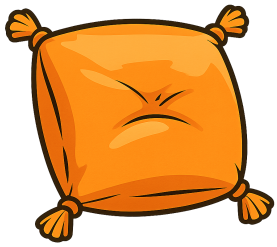
(D) 16 (E) None of the above

9. Ben has $100. He wants to buy 3 of the items shown below.

Soft toy
$39



Cap
$28



Cushion
$25

T-shirt
$32

Hoodie
$46

How many ways can he buy 3 of the items?

(A) 3 (B) 4 (C) 5

(D) 6 (E) None of the above

10. Jane bought a blue, red, yellow and orange T-shirt. Ken, Lisa, Mandy and Tom took a T-shirt of their favourite colour.

- Ken dislikes yellow and red.
- Lisa dislikes red and orange.
- Mandy's favourite colour is orange.
- Tom's favourite colour is the colour both Ken and Lisa dislike.

Which of the following statements is **false**?

(A) Ken took the blue T-shirt.

(B) Lisa did not take the blue T-shirt.

(C) Lisa did not take the yellow T-shirt.

(D) Mandy took the orange T-shirt.

(E) Tom took the red T-shirt.

Section B

Questions 11 and 12 carry 6 marks each.

11. Each letter represents a different digit.

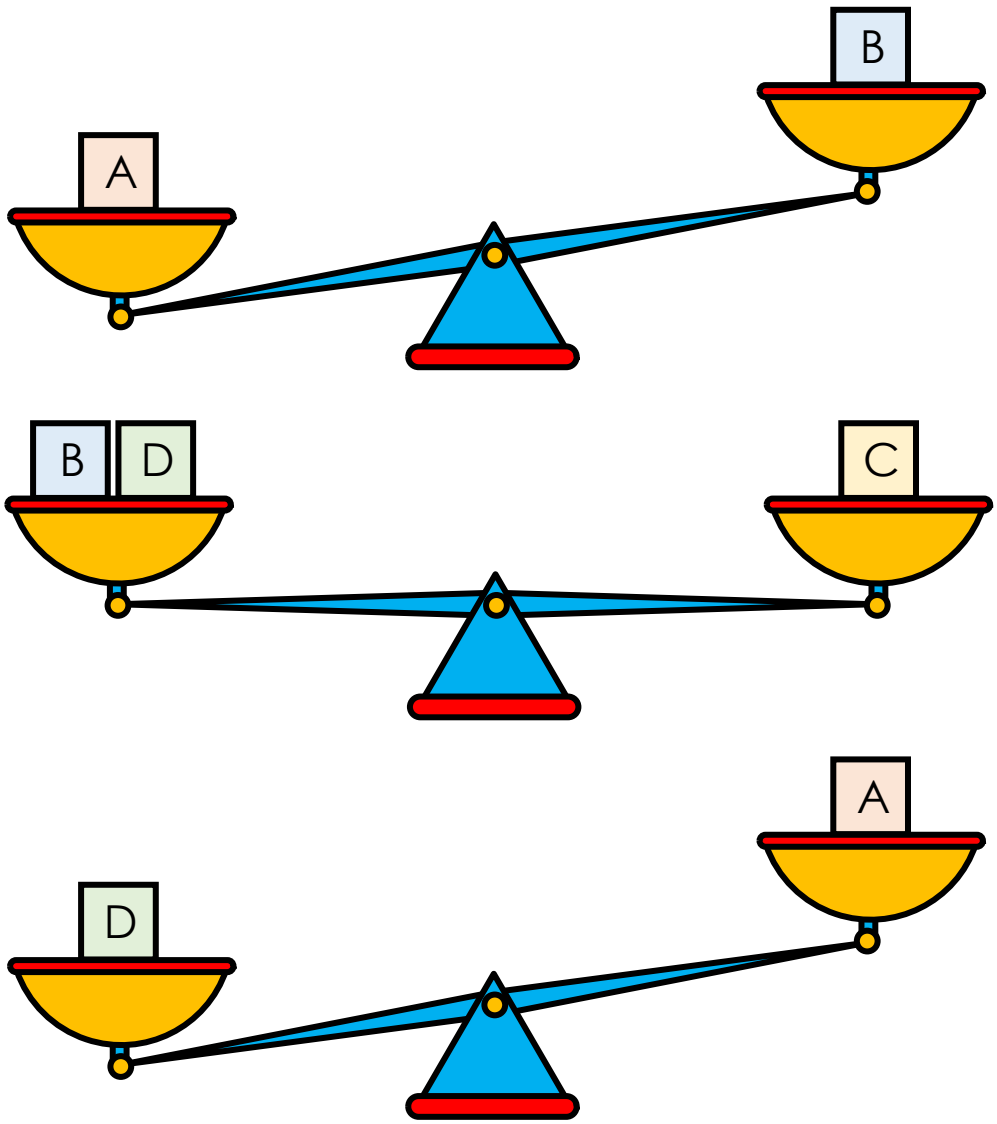
$$\begin{array}{cccc} & A & B & C \\ & & B & C \\ + & & & C \\ \hline & D & E & F \end{array}$$

Find the greatest possible 3-digit number ABC can represent.

(A) 872 (B) 873 (C) 874

(D) 875 (E) None of the above

12. Study the diagram below.



Arrange the blocks in order from the lightest to the heaviest.

(A) B, A, C, D (B) B, A, D, C (C) B, C, A, D

(D) B, C, D, A (E) A, D, B, C