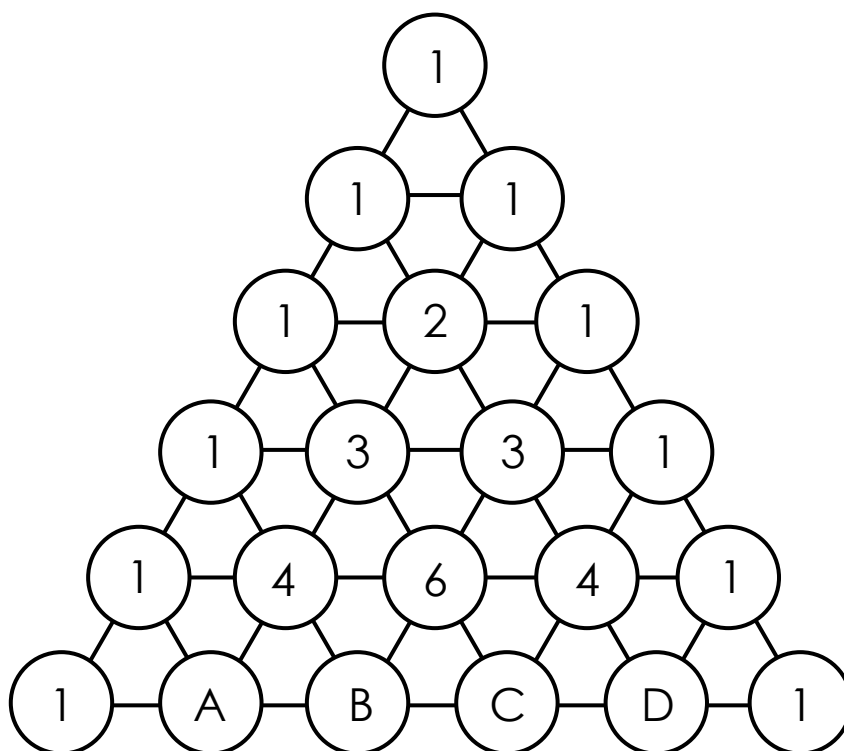# Junior Maths Mastery Challenge Sample

Paper A

Section A

Questions 1 to 5 carry 3 marks each.

1. Study the pattern below.

What is the value of A + B + C + D?

(A) 22   (B) 24   (C) 26

(D) 28   (E) 30

2. Paul wants to distribute 10 cookies among 3 plates so that each plate has a different number of cookies. How many ways can he distribute all the cookies if each plate has at least 1 cookie?

(A) 4   (B) 6   (C) 8

(D) 10   (E) 12

3. There are 18 people queueing for ice-cream.
Emma is 7th in the queue. John is behind Emma.
There are 5 people between them.
What is John's position from behind?

(A) 4th   (B) 5th   (C) 6th

(D) 12th   (E) 13th

4. Numbers are to be filled in the circles so that the three numbers along each side of the triangle add up to 30. What number does the letter P represent?
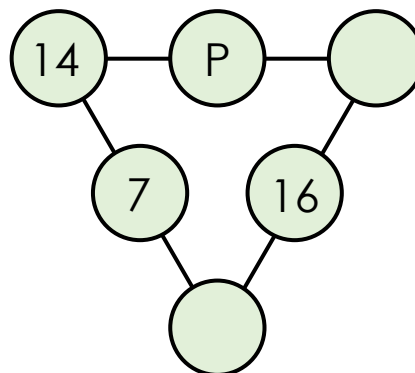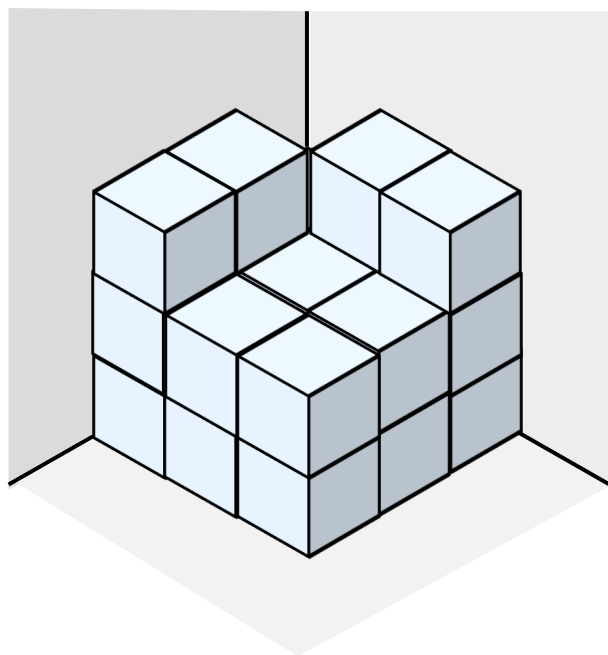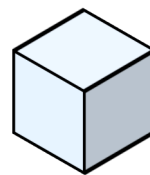

(A) 5   (B) 8   (C) 9

(D) 11   (E) 16

5. Find the missing number in the pattern below.
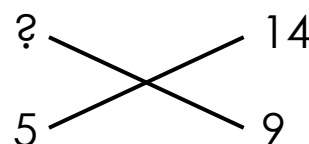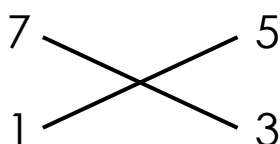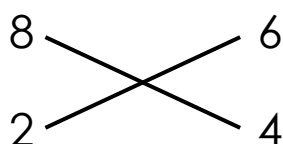
(A) 15   (B) 16   (C) 17

(D) 18   (E) 20

Questions 6 to 10 carry 4 marks each.

6. What is the greatest possible number of in the figure?

(A) 20   (B) 21   (C) 22

(D) 23   (E) 24

7. Trace along the following figures using a pencil. Which figure(s) can be traced without drawing over any line twice and without lifting the pencil?
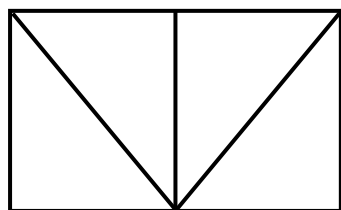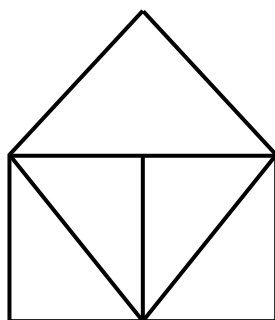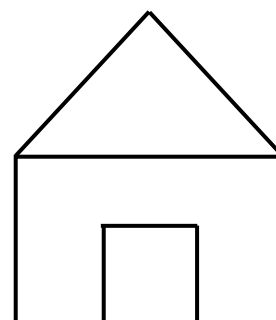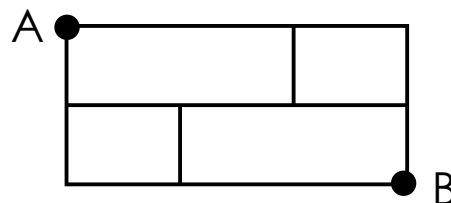
Figure A   Figure B   Figure C

(A) Figure A only
(B) Figure B only
(C) Figure C only
(D) Figures A, B and C
(E) None of the above

8. A postman wants to deliver a parcel from Point A to Point B. How many ways can he walk from Point A to Point B using the directions ⟶ and ↓ only?

(A) 5   (B) 6   (C) 7

(D) 8   (E) None of the above

9. The two figures below can be used to form a larger square.
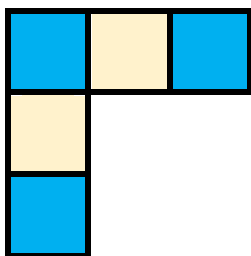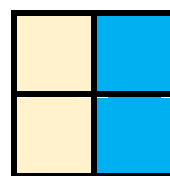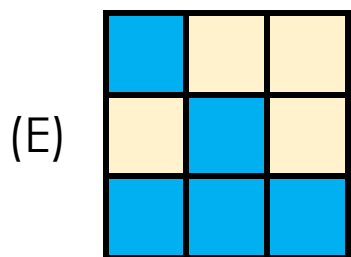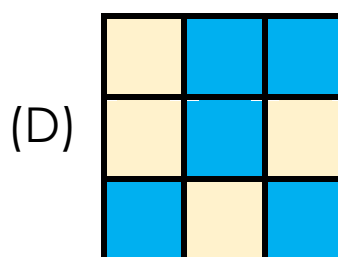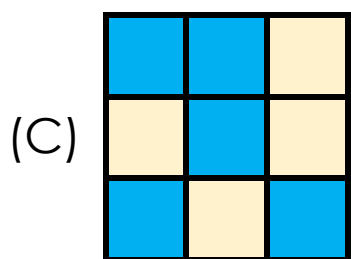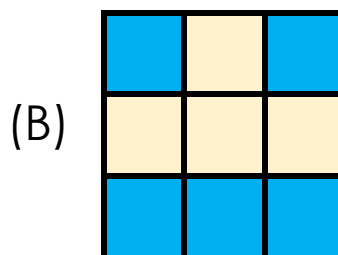

Figure A   Figure B

Which of the following cannot be the larger square?

(A)

(B)

(C)

(D)

(E)
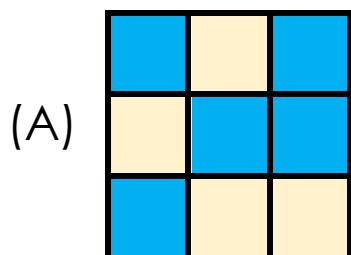
10. Mrs Brown left an apple on the table. When she came back, she found that the apple had been eaten by one of her children, Joe, Lina or Tom.

Joe said, 'Lina ate the apple.'

Lina said, 'Tom ate the apple.'

Tom said, 'Lina was lying.'

Only one of them lied. Which of the following statements is **true**?

(A) Joe ate the apple.
(B) Lina was lying.
(C) Tom ate the apple.
(D) Tom was lying.
(E) None of the above

Section B

Questions 11 and 12 carry 6 marks each.

11. Each letter below represents a different digit.

$$\begin{array}{r} S\ A \\ +\ M\ A \\ \hline A\ M \end{array}$$

Find the greatest possible 2-digit number AM can represent.

12. Numbers 1 to 100 are arranged in the pattern shown below.

	Column A	Column B	Column C	Column D	...
Row 1	1	10	11	20	...
Row 2	2	9	12	19	...
Row 3	3	8	13	18	...
Row 4	4	7	14	17	...
Row 5	5	6	15	16	...

In which row and column does 48 appear in?

PLEASE NOTE THAT THE ACTUAL COMPETITION PAPER WILL CONSIST TOTAL OF 25 QUESTIONS