Middle Primary Division

1. The value of $2 + 0 + 1 + 7$ is

(A) 10   (B) 19   (C) 37   (D) 208   (E) 2017

2. Jillian has her 9th birthday in 2017. In which year was she born?

(A) 2006   (B) 2007   (C) 2008   (D) 2009   (E) 2010

3. What is the value of the 2 in 213?

(A) 0.02   (B) 0.2   (C) 2   (D) 20   (E) 200

4. The squirrel's tree is on square L3. To get there from square K1, the squirrel must move

(A) two squares right and one square down

(B) one square left and two squares down

(C) three squares left and two squares down

(D) three squares right and one square down

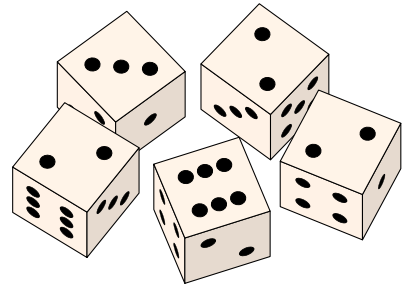(E) one square right and two squares down

5. Lincoln went to buy some fruit at the school canteen. He bought 4 apples which cost 30 cents each. How much did the 4 apples cost?

(A) 60c   (B) 80c   (C) $1.00   (D) $1.20   (E) $1.60

6. Five dice were rolled, and the results were as shown.

What fraction of the dice showed a two on top?

(A) $\dfrac{3}{4}$ (B) $\dfrac{1}{2}$ (C) $\dfrac{2}{3}$

(D) $\dfrac{2}{5}$ (E) $\dfrac{3}{5}$

7. Zara was cycling. She came to a T-intersection in the road where she saw this sign.

The road to Smithton passes through Marytown.

How many kilometres is it from Marytown to Smithton?

28 km   Janesville

Marytown   15 km

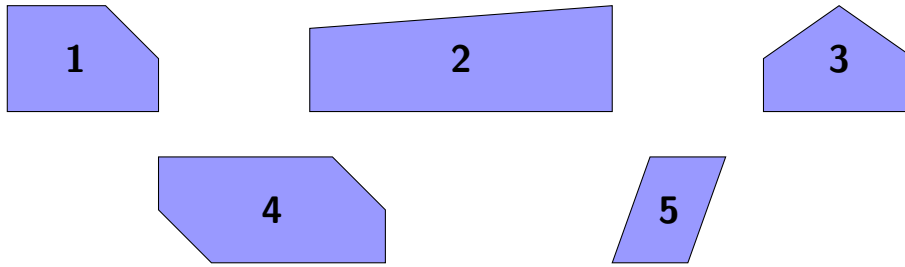Smithton   23 km

(A) 8   (B) 13   (C) 38   (D) 43   (E) 51

8. Riverside Primary School has 235 staff and students. Each bus can fit 50 people. What is the least number of buses they need for a whole school excursion?

(A) 2   (B) 3   (C) 5   (D) 6   (E) 7
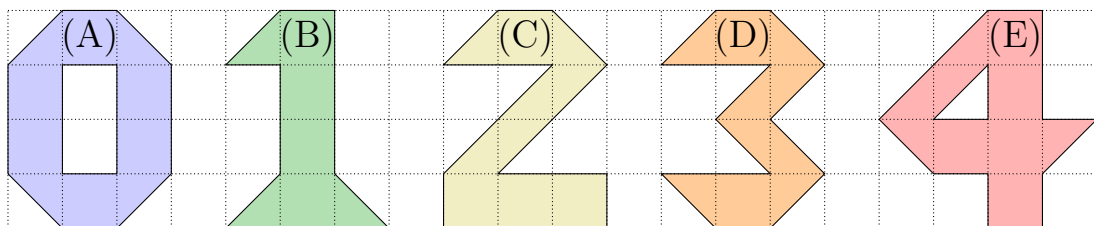
9. Which of these shapes are pentagons?

(A) all of the shapes   (B) shape 3 only   (C) shapes 3 and 4

(D) shapes 1 and 3   (E) none of the shapes

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10. Fred gave half of his apples to Beth, and then half of what was left to Sally, leaving him with just one apple. How many did he have to start with?

(A) 12   (B) 8   (C) 6   (D) 4   (E) 2

Questions 11 to 20, 4 marks each

**11.** Which of the shaded areas below is the largest?

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12. Helen is adding some numbers and gets the total 157. Then she realises that she has written one of the numbers as 73 rather than 37. What should the total be?

(A) 110   (B) 121   (C) 124   (D) 131   (E) 751

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13. In the year 3017, the Australian Mint recycled its coins to make new coins.

Each 50c coin was cut into six triangles, six squares, and one hexagon. The triangles were each worth 3c and the squares were each worth 4c.

How much should the value of the hexagon be to make the total still worth 50c?
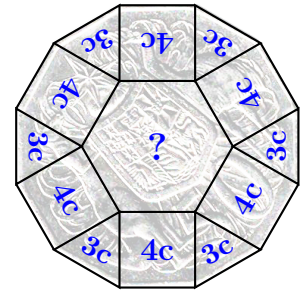
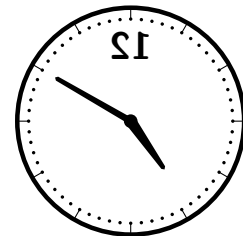(A) 3c   (B) 8c   (C) 18c   (D) 20c   (E) 43c

14. At the supermarket Ashan noticed that her favourite biscuits were on special, with one-third extra for free in the packet.

If this *special* packet contained 24 biscuits, how many biscuits would be in the *normal* packet?

(A) 12   (B) 16   (C) 18   (D) 20   (E) 32

15. Greg sees a clock in the mirror, where it looks like this. What is the actual time?
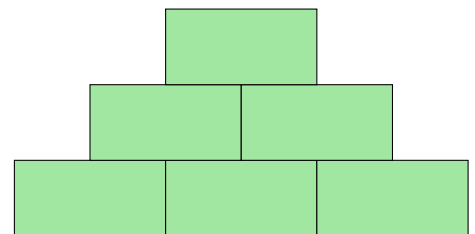
(A) 4:10   (B) 4:50   (C) 5:10

     (D) 6:50   (E) 7:10

16. Jonathan made this shape with rectangular cards 2 cm long and 1 cm wide.

What is the perimeter of the shape?

(A) 6 cm   (B) 12 cm   (C) 18 cm

     (D) 24 cm   (E) 36 cm

17. In these two number sentences

$$\heartsuit + \heartsuit + \heartsuit + \star = 12$$

$$\star + \star + \star + \heartsuit = 20$$

what is the value of $\heartsuit$?

(A) 1   (B) 2   (C) 3   (D) 4   (E) 5

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18. One year in June, there were four Wednesdays and five Tuesdays. On which day was the first of June?

(A) Monday   (B) Tuesday   (C) Thursday   (D) Friday   (E) Saturday

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19. In the 4 by 4 square shown, I am filling in the 16 small squares with the numbers 1, 2, 3 and 4 so that each row and each column has one of each of these numbers. I have filled in some of the squares as shown.

What do the two squares marked $*$ add to?

1		*	
		*	4
			2
4	3	2	1

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

(D) 6   (E) 7

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20. On these scales, two of the cubes balance with three of the balls.
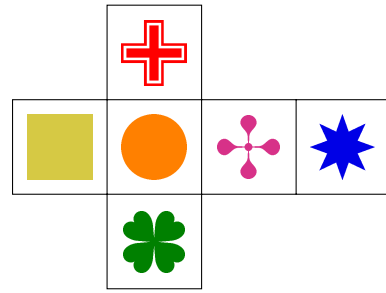
How many cubes need to be added to the right-hand side to make the scales balance?

(A) 5   (B) 6   (C) 8

(D) 12   (E) 13
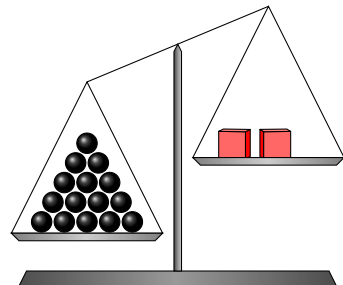
Questions 21 to 25, 5 marks each

21. This shape can be folded up to make a cube.
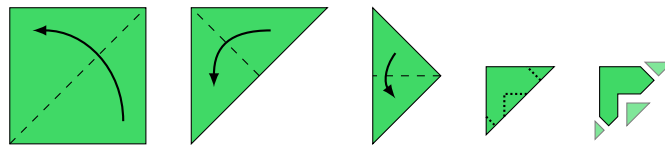
Which cube could it make?

(A)

(B)

(C)

(D)

(E)

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22. How many three-digit numbers contain only the digits 2 and 3, and each of them at least once?

(A) 2   (B) 4   (C) 6   (D) 8   (E) 32

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23. Which one of the patterns below would be created with these folds and cuts?
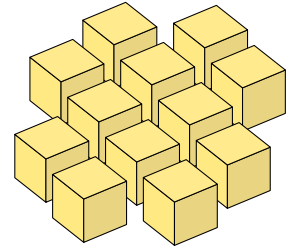
(A)   (B)   (C)   (D)   (E)

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24. I have a rectangular block of cheese that I can cut into 12 identical 1 cm cubes, with none left over.
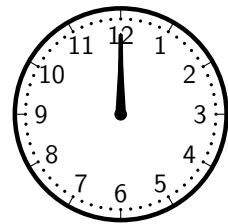
How many differently-shaped blocks of cheese could I have started with?

(A) 2   (B) 3   (C) 4   (D) 5   (E) 6

25. A clockface can be divided with two straight lines into three regions so that the sum of the numbers in each region is the same. What is this sum?

(A) 20   (B) 22   (C) 24

          (D) 26   (E) 28

For questions 26 to 30, shade the answer as a whole number from 0 to 999 in the space provided on the answer sheet.

Question 26 is 6 marks, question 27 is 7 marks, question 28 is 8 marks, question 29 is 9 marks and question 30 is 10 marks.

26. In a three-digit number, one of the digits is 7 and the difference between any two of the digits is 4 or less.

What is the smallest this number could be?

27. Julie has 5 steps up to her classroom, where step 5 is the floor of the classroom.

Each day she tries to think of a different way of climbing up these steps. She does not have to touch each step, but the biggest distance she can reach is 3 steps.

How many different ways are there of going up the steps?
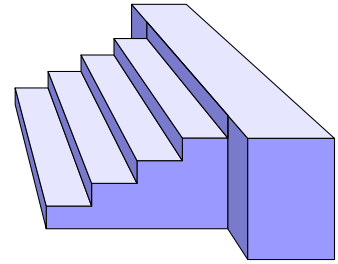
28. Zhipu has an unusual construction set, consisting of square tiles which only connect together if they are joined with half a side touching. That is, the corner of one connects with the midpoint of the other, as in the diagram.

In how many ways can he connect three tiles?

(Two arrangements are not different if they can be rotated or reflected to look the same.)
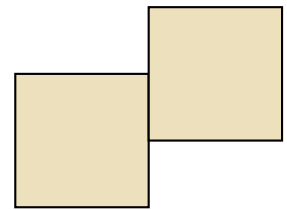
29. Old Clarrie has three dogs. The oldest is Bob, next comes Rex and Fido is the youngest. Fido is 10 years younger than Bob, and none of the dogs are the same age.

When Clarrie adds their ages together they come to 28 years.

When Clarrie multiplies their ages together, he gets a number.

What is the smallest that this number could be?

30. All of the digits from 0 to 9 are used to form two 5-digit numbers. What is the smallest possible difference between these two numbers?