SURNAME	First name

Entrance Exam Mathematics Familiarisation

π | **Rossall**
INSPIRING EXCELLENCE
MATHEMATICS

TOTAL MARKS	

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*
- **Calculators may be used.**

Information

- The total mark for this paper is 50.
- Every question is worth one mark.

Advice

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.
- Work as quickly and as carefully as you can.
- You may find some of the questions difficult. If you cannot do a question then move onto the next question and come back to it if you have time

1. Use all of these digits to make the smallest number possible: 2, 5, 9, 1

....

2. Plot the point (3,5) on this coordinate grid.

....
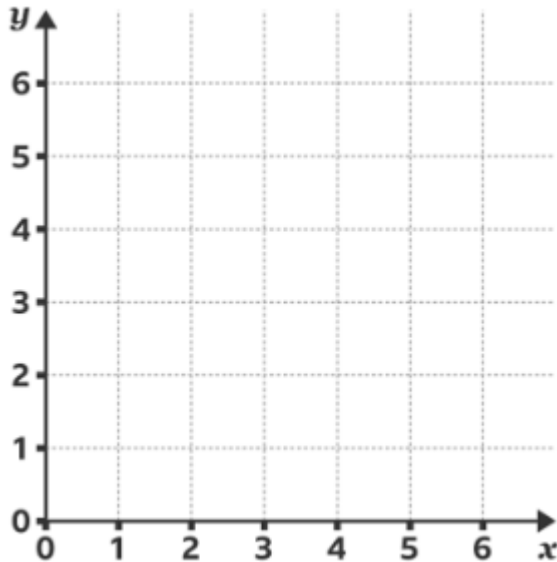
3. Write down a fraction that is equivalent to $\dfrac{3}{5}$

....

4. I think of a number and subtract 5, then double it. The answer is 10. What was my number?

....

5. Calculate -5+7

....

6. What is the remainder when 25 is divided by 3?

....

7. What is the next number in this sequence?

$$3, 7, 11, 15, \dots$$

....

8. Write this number in figures: three thousand, four hundred and two.

....

9. This pictogram shows information about the number of books sold by an author in January, February and March.

January	
February	
March	

Key: represents 8 books
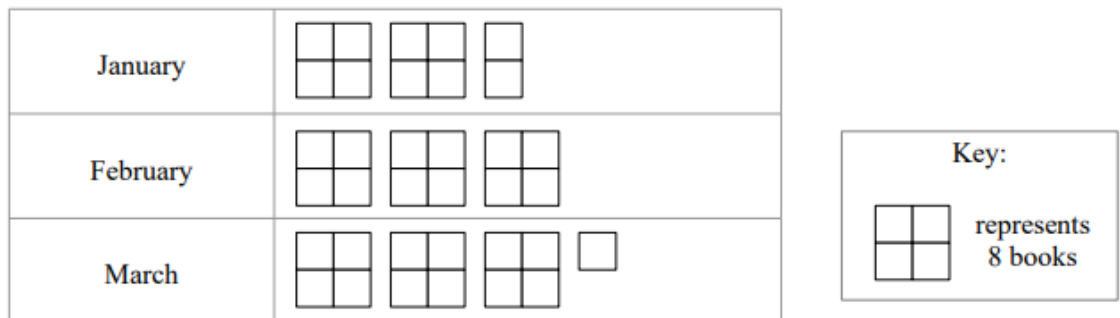
Write down the number of books sold in March.

....

10. Write down the value of the 8 in 5486.

....

Here is a list of numbers:

8   12   15   17   23   27   32

11. From the numbers in the list write down a multiple of 8.

....

12. From the numbers in the list write down a prime number,

....

13. From the numbers in the list, write down a factor of 24..

....

14. What is $\frac{3}{4}$ as a percentage?

....

15. Mr. Shaw went shopping at a superstore.

The pie chart shows information about the money she spent on clothes, food and other items.
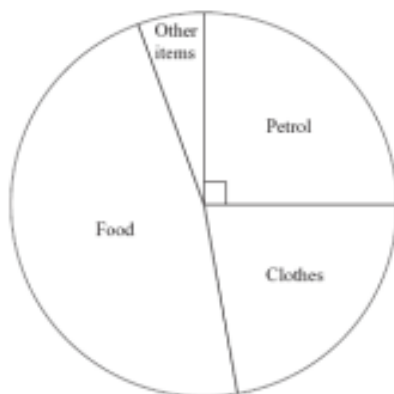
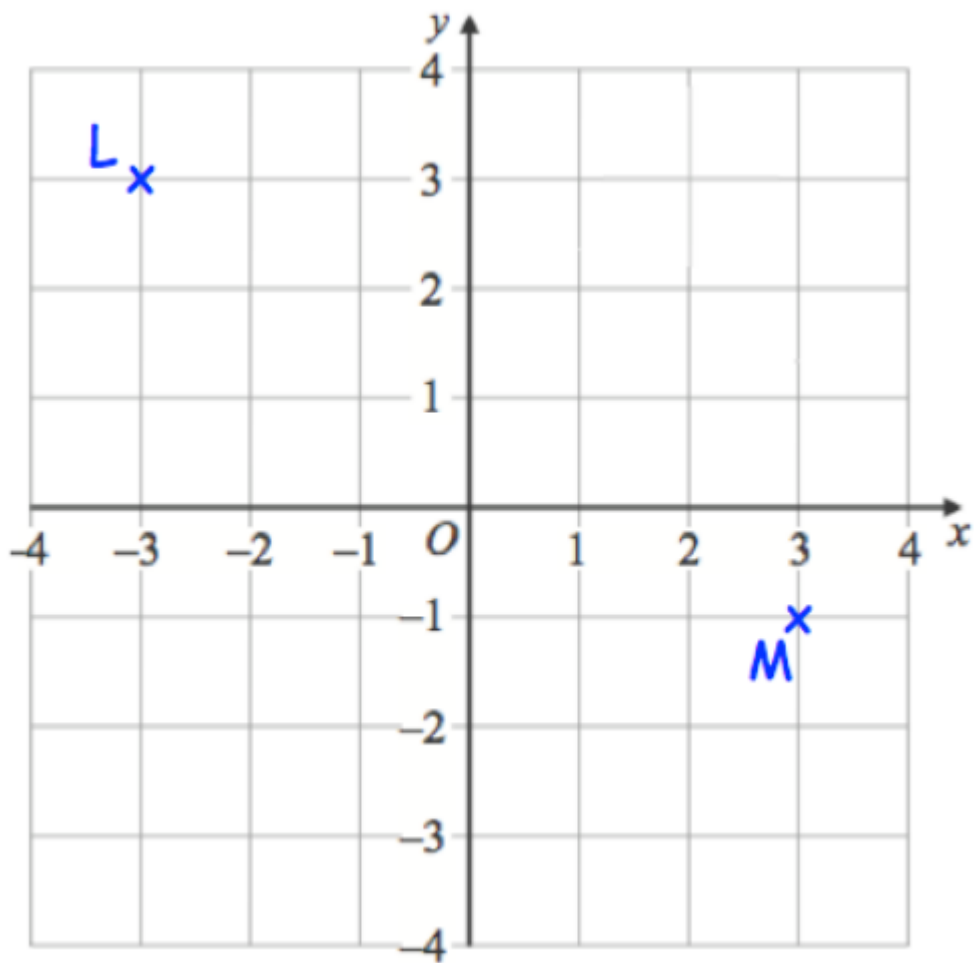What did he spend most money on?

....

16. What is 52 cm in mm?

....

17. A rectangle is 5cm by 4cm. What is its perimeter?

....

18. What are the coordinates of M?

....

19. What are the coordinates of L?

....

20. Sam spends £3.60 on sweets that cost 45p each. How many sweets did he buy?

....

21. Fill in the box to make this calculation correct:

$$803 - 29\boxed{} \quad = \quad 506$$

....

22. What is $\sqrt{36}$?

....

23. Work out $(3 + 5)^2 \div 4 + 2$

....

24. This shape has been drawn on a centimetre square grid.
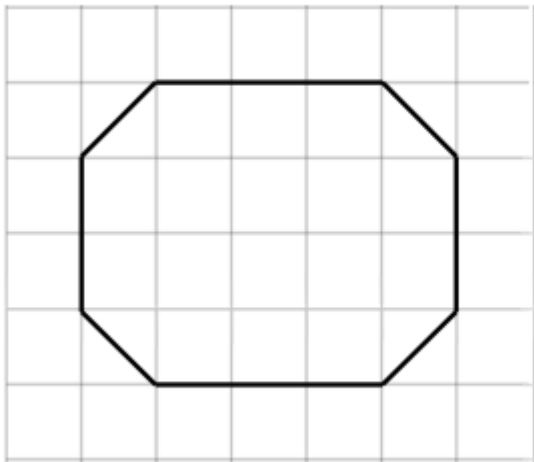
What is the area of this shape?

....cm²

25. What is the name of the shape drawn in question 24?

....

26. What is the area of this triangle?

4cm

7cm
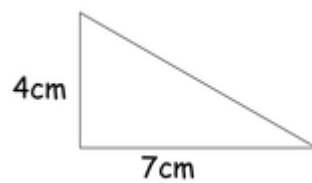
....cm²

27. What is the sum of 256 and 741?

....

28. Which is bigger $\frac{2}{5}$, 38% *or* 0.41?

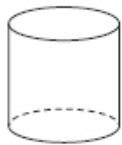...

29. There are 22 students in a class. On a particular day 6 of the students are out of school at a Mathematics competition and 3 are not at school because they are unwell. Everyone else is attending school. How many students are present from that class that day?
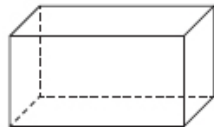
....

30. Round 8575 to the nearest ten.

....

31. Here are some 3D shapes.
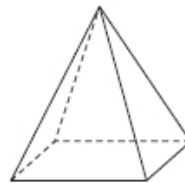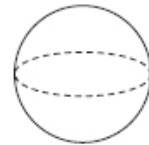
A   B   C   D   E

Which of these shapes is a cuboid?

....

32. How many vertices does shape D have?

....

33. Japan is 9 hours ahead of the UK. If it is 9:23am in Japan, what time is it in the UK?

....

34. Below is a line graph that shows how many books are sold in a charity shop over one week.
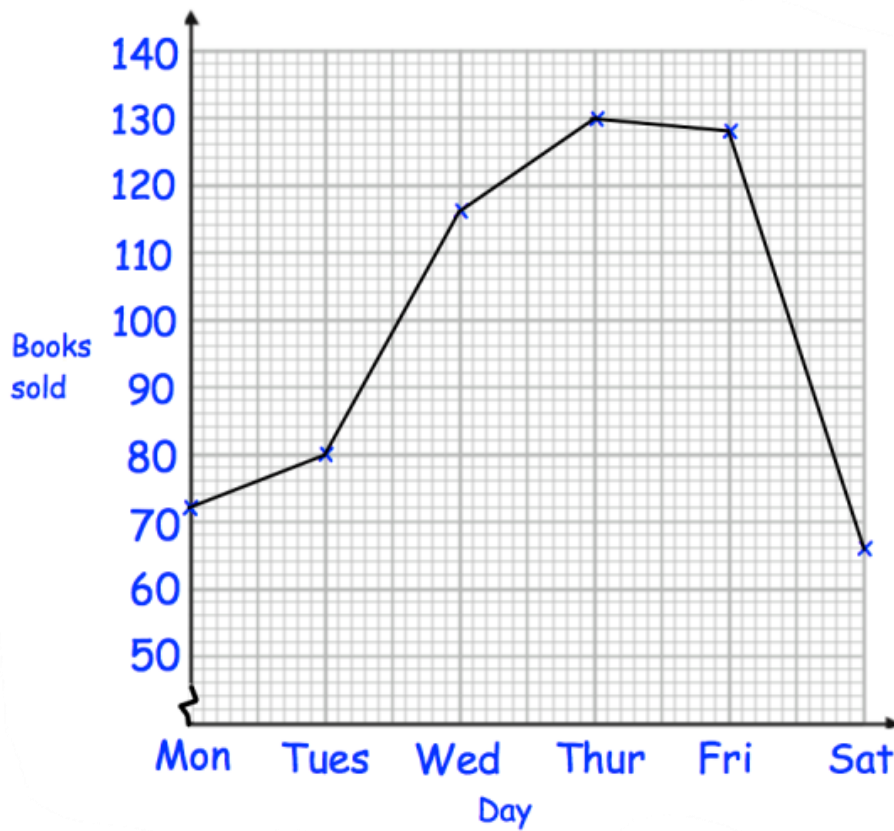
How many more books were sold on Thursday than on Tuesday?

....

35. The ratio of red counter to blue counters is 3:4. If there are 12 red counters how many blue counters are there?

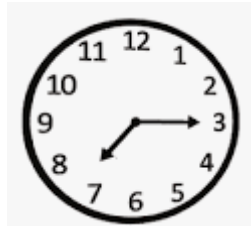..

36. What is the mean of these numbers: 2, 2, 5, 7?

....

37. What is $\frac{2}{5}$ of 130?

....

38. Josh looks at this clock in his bedroom.

His bedtime is in 15 minutes. What time does Josh go to bed?

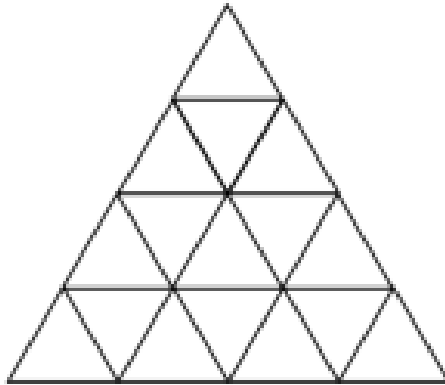..

39. Write these Roman Numerals in order starting with the smallest:

X,   C,   L,   V,   I

....

40. Shade a quarter of the shape below.

41. An apple costs 20p. Charlotte buys 3 apples and 2 bananas and spends 80p. How much does a banana cost?

....

42. Work out the missing value:

$$\frac{2}{5} \times 30 = 3 \times \boxed{}$$

....

43. Apples are sold in bags of 5. Xinchen buys 6 bags of apples. He then uses 8 apples to make a pie. How many apples does Xinchen have left?

....

44. James has £68. Mo has £42. James gives Mo some money. They now have the same amount of money. How much money does James give Mo?

....

45. Work out the missing value:

$$\triangle \times \triangle = 25$$

$$\heartsuit + \heartsuit = 16$$

$$\triangle + \heartsuit = \boxed{}$$

....

46. The difference between two numbers is 5. Their product is 14. What could the 2 numbers be?

....

47. A square is divided into smaller squares. What fraction of the original square is shaded?

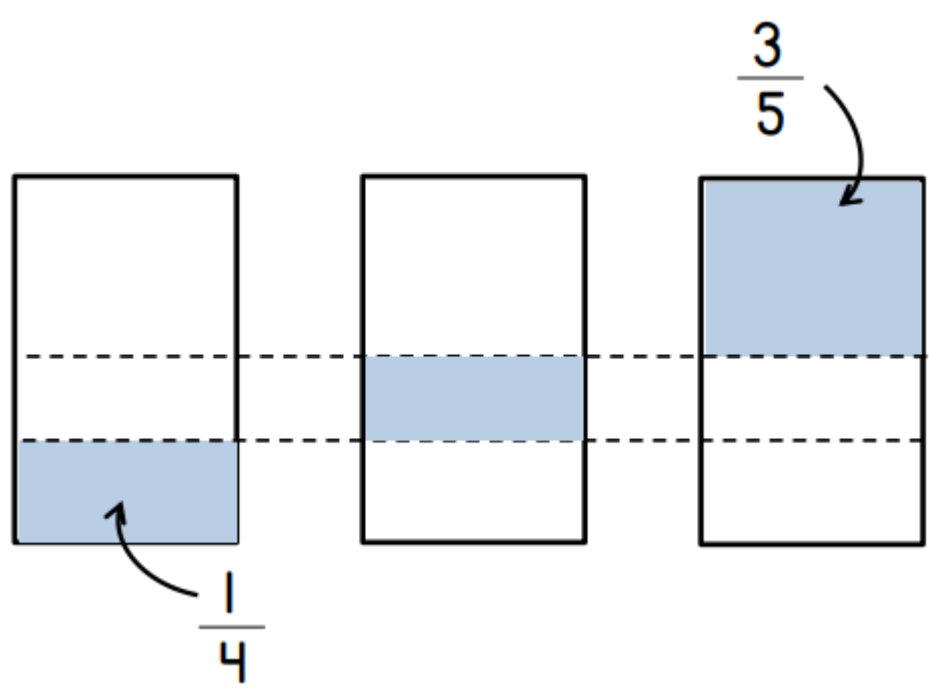...
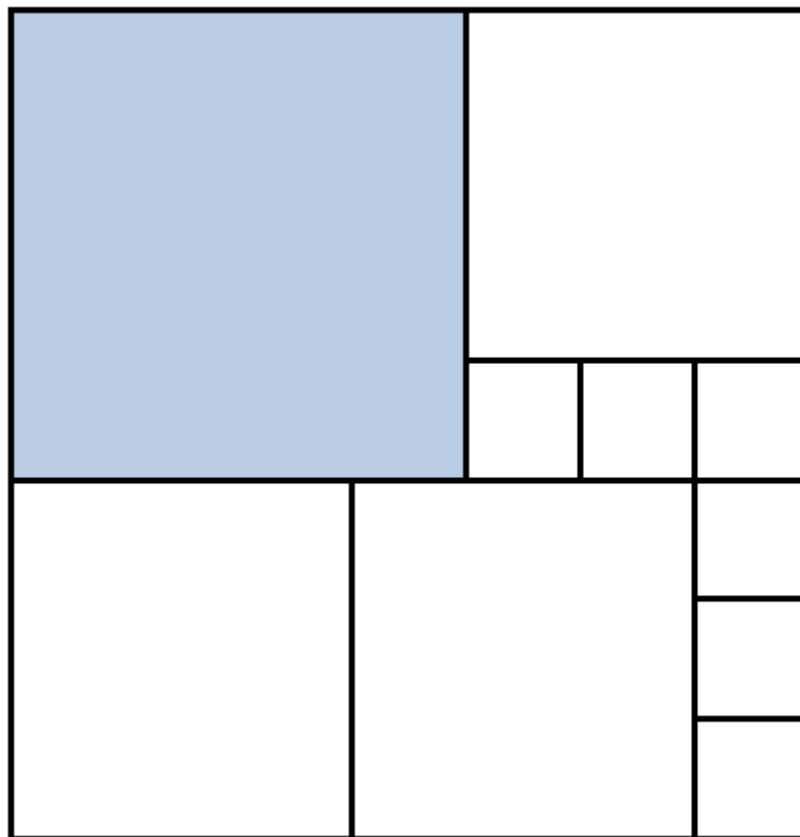
48. Phillip is thinking of a number. It is less than 50. It is a 2-digit number. 3 is a factor of Phillip's number. The sum of the digits of the number is one third of the number. What is the number?

....

49. Here are three rectangles. Part of each one has been shaded.

$$\frac{3}{5}$$

$$\frac{1}{4}$$

What fraction of the middle shape has been shaded?

....

50. Add brackets to make this calculation correct:

$$2 \times 5 - 7 - 6 = -10$$

....