



# **St. Anselm's College**

## **Sample Maths Paper 2**

**This paper lasts 45 minutes (please see note below regarding new paper)**

**Calculators are NOT allowed**

**Please note that we are no longer including Mental Maths as part of the Maths Entrance Exam. The written paper will now be slightly longer and will be 60 minutes, not 45 minutes as with previous exams.**

**1) India is the 7<sup>th</sup> largest country in the world with an area of about 1,300,000 square miles. Write this number in words.**

*(1 mark)*

**2) More accurately, the area of India is 1,269,219 square miles. Write that number in words.**

*(1 mark)*

3)

|  |  |  |
|--|--|--|
| <h1 style="margin: 0;">Car Parking</h1> <h2 style="margin: 0;">70p</h2> <p style="margin: 0;">Pay using any of these coins:</p> <p style="margin: 0;">10p          20p          50p</p> <hr style="border: 0.5px solid black;"/> <p style="margin: 0;">No change given</p> |  |  |
|--|--|--|

**Complete the table to show all the different ways of making exactly 70p**

| Number of<br><b>10p</b> coins | Number of<br><b>20p</b> coins | Number of<br><b>50p</b> coins |
|-------------------------------|-------------------------------|-------------------------------|
| 7                             | 0                             | 0                             |
|                               |                               |                               |
|                               |                               |                               |
|                               |                               |                               |
|                               |                               |                               |
|                               |                               |                               |

*(3 marks)*

- 4) Look at the Northern Line train timetable below and then answer the questions.

|              |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|
| Ormskirk     |      | 0550 |      | 0620 |      | 0650 |
| Aughton Park |      | 0553 |      | 0623 |      | 0653 |
| Town Green   |      | 0555 |      | 0625 |      | 0655 |
| Maghull      |      | 0600 |      | 0630 |      | 0700 |
| Old Roan     |      | 0603 |      | 0633 |      | 0703 |
| Aintree      |      | 0605 |      | 0635 |      | 0705 |
| Orrell Park  |      | 0607 |      | 0637 |      | 0707 |
| Walton       |      | 0609 |      | 0639 |      | 0709 |
| Kirkby       | 0548 |      | 0618 |      | 0648 |      |
| Fazakerley   | 0551 |      | 0621 |      | 0651 |      |
| Rice Lane    | 0554 |      | 0624 |      | 0654 |      |
| Kirkdale     | 0557 | 0612 | 0627 | 0642 | 0657 | 0712 |
| Sandhills    | 0600 | 0614 | 0630 | 0644 | 0700 | 0714 |
| Moorfields   | 0603 | 0618 | 0633 | 0648 | 0703 | 0718 |
| Central      | 0606 | 0620 | 0636 | 0650 | 0706 | 0720 |

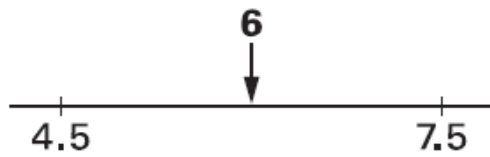
- a) I need to catch a train from Old Roan to ensure I arrive at Moorfields before 0620. What time does the latest train I could catch leave Old Roan?

(1 mark)

- b) How many minutes does the train journey from Aughton Park to Sandhills take?

(1 mark)

5) The number 6 is half way between 4.5 and 7.5



**Fill in the missing numbers below:**

a) The number 6 is half way between 2.8 and

*(1 mark)*

b) The number 6 is halfway between -12 and

*(1 mark)*

c) Now work out the number that is half way between  $27 \times 38$   
and  $33 \times 38$

Show your working.

*(2 marks)*

**6) Fill in the missing numbers.**

$$\frac{1}{2} \text{ of } 20 = \frac{1}{4} \text{ of } \dots\dots\dots$$

$$\frac{3}{4} \text{ of } 100 = \frac{1}{2} \text{ of } \dots\dots\dots$$

$$\frac{1}{3} \text{ of } 60 = \frac{2}{3} \text{ of } \dots\dots\dots$$

(3 marks)

7) I live 0.5 miles from Goodison Park football stadium. There are 1760 yards in a mile.

a) How many yards away from Goodison Park do I live?

(1 mark)

b) I live 2,640 yards from Anfield football stadium. How many miles from Anfield football stadium do I live?

(1 mark)

c) A kilometre is five eighths of a mile. How many kilometres away from Anfield do I live?

(2 marks)

8) Solve the following:

a) I think of a number, multiply it by 20 and then subtract 7. The result is 3. What was the number I first thought of?

(2 marks)

b) What number must  $m$  be to make this mathematical statement true?

$$7 \times m + 13 = 10 \times m + 7$$

(2 marks)

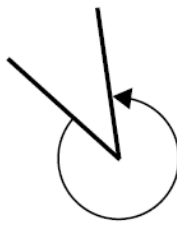
9) Look at these angles:



angle P



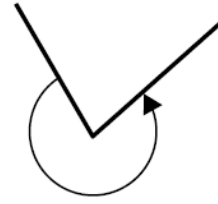
angle Q



angle R



angle S



angle T

One of the angles measures about  $320^\circ$

Circle which angle it must be and write the name of this type of angle below.

(2 marks)

10) Write the next two numbers for each of the following sequences.

a) 3    9    15    21    27       

(1 mark)

b) 3    6    12    24    48       

(1 mark)

c) 3    3.7    4.4    5.1    5.8       

(1 mark)

d) 3    -6    12    -24    48       

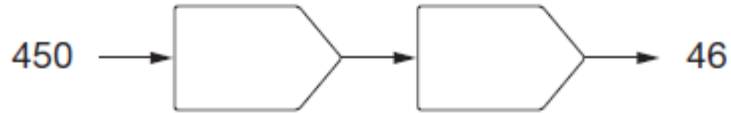
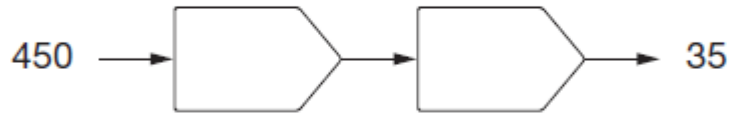
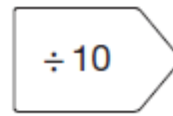
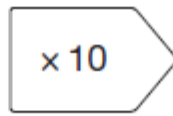
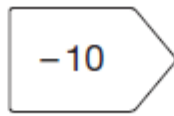
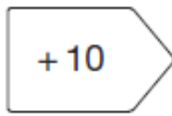
(1 mark)

e) To make the sequence in part (d) you multiply by the same number each time. What is the number?

(1 mark)

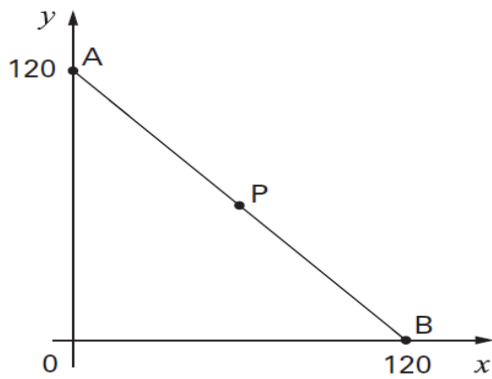


**11) Fill in the boxes to complete each number chain using any of the following.**



(3 marks)

12) Look at the diagram below:

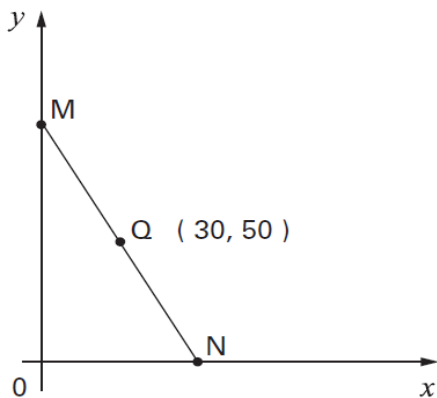


P is the mid-point of the line AB.  
 What are the co-ordinates of P?

P is ( ..... , ..... )

(2 marks)

Now look at this diagram.



Q is the mid-point of the line MN. The co-ordinates of Q are (30, 50).

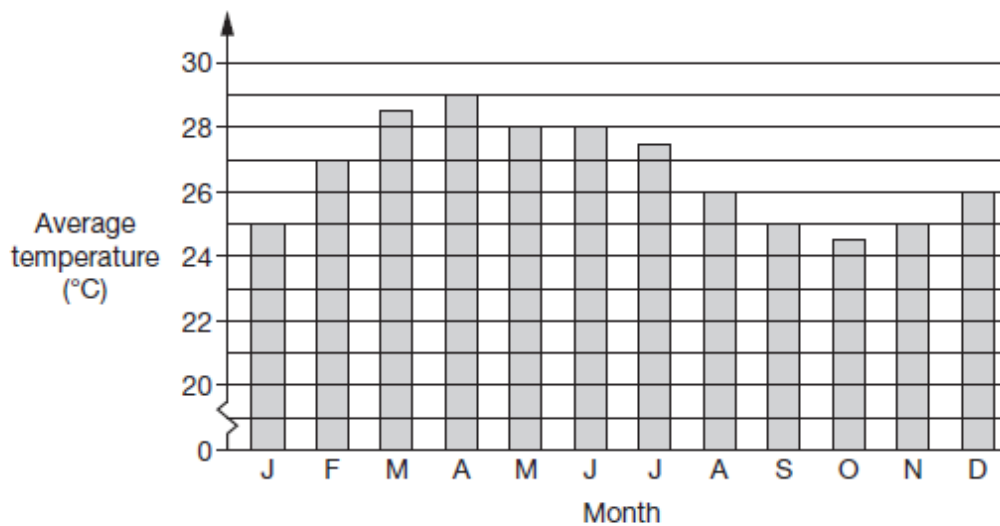
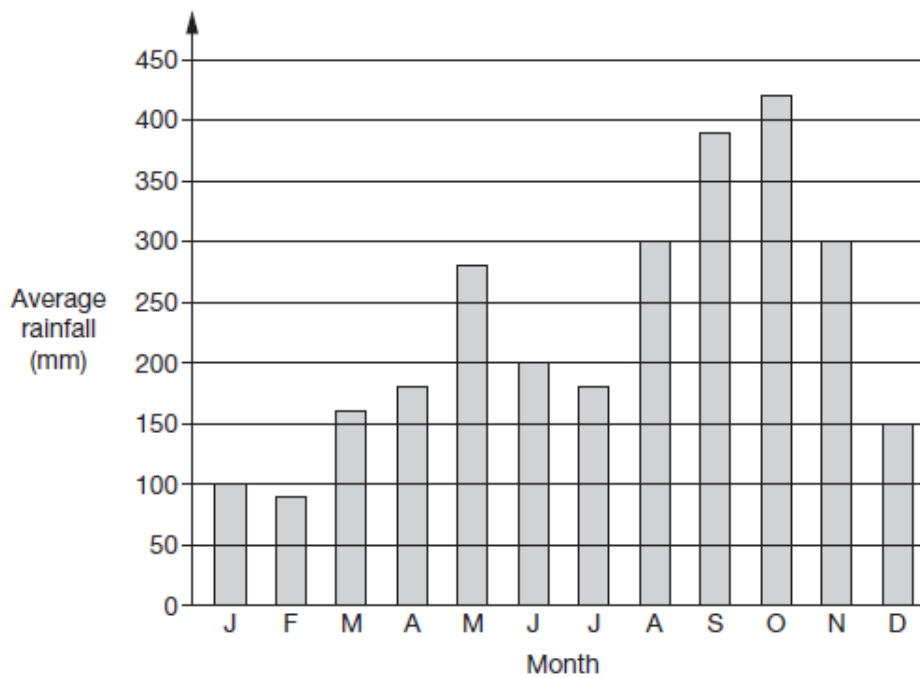
What are the co-ordinates of the points M and N?

M is ( ..... , ..... )

N is ( ..... , ..... )

(3 marks)

13) The charts below show information about a rainforest.



Use the charts to answer these questions.

- a) In the month that has the **lowest** average **rainfall**, what is the average **temperature**?

(1 mark)

b) In the month that has the **highest** average **temperature**, what is the average **rainfall**?

(1 mark)

c) Sanjay has decided to visit the rainforest. He does **not** like high rainfall and he does **not** like high temperatures. During which of these months should he visit? Circle your answer.

January

March

April

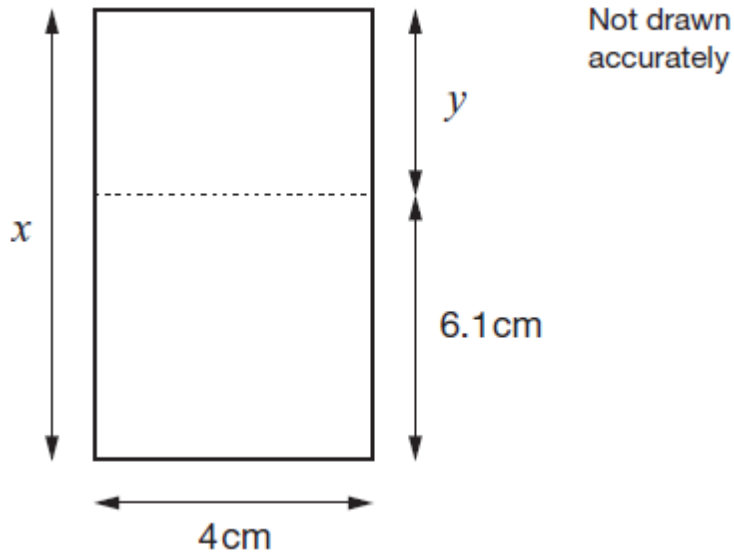
October

December

(1 mark)

**14) Look at the rectangle below. The total area of the rectangle is  $40 \text{ cm}^2$ .**

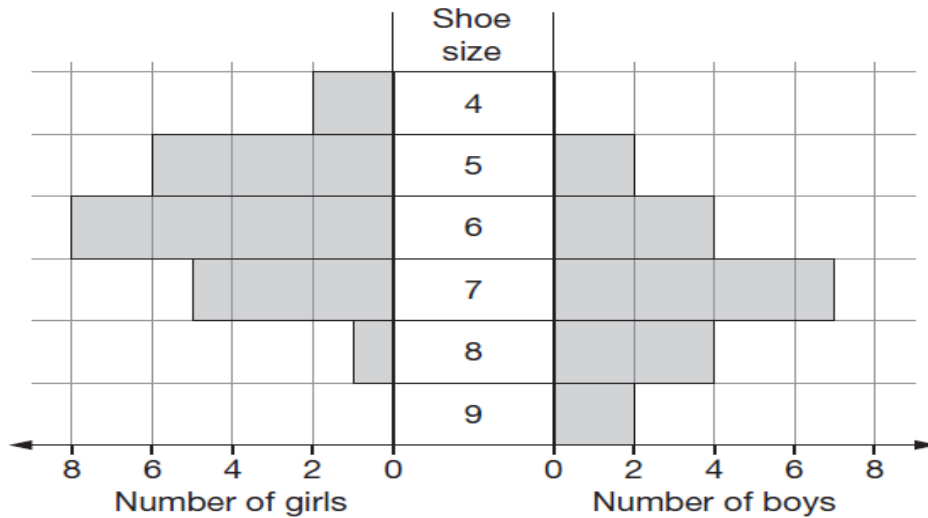
Work out the lengths  $x$  and  $y$ .



(3 marks)

15) Some pupils were asked the question, "To the nearest whole number, what is your shoe size?"

The chart below shows the results.



a) How many pupils are size 7?

(1 mark)

b) How many fewer boys than girls were asked?

(1 mark)

c) Who had the smaller range of shoe sizes? Tick the correct box.

 Girls

 Boys

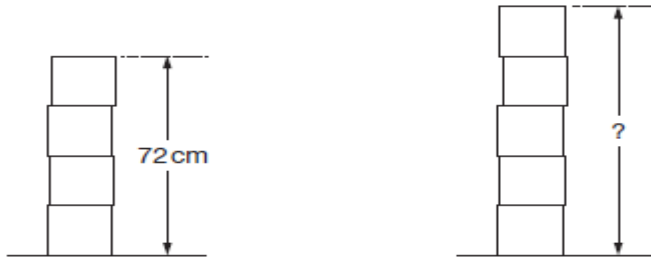
 Both the same

Explain your answer.

(2 marks)

**16) Lisa has some boxes that are all cubes of the same size.  
She uses four of the boxes to make a pile of height 72cm.**

She puts one more box on top of the pile.

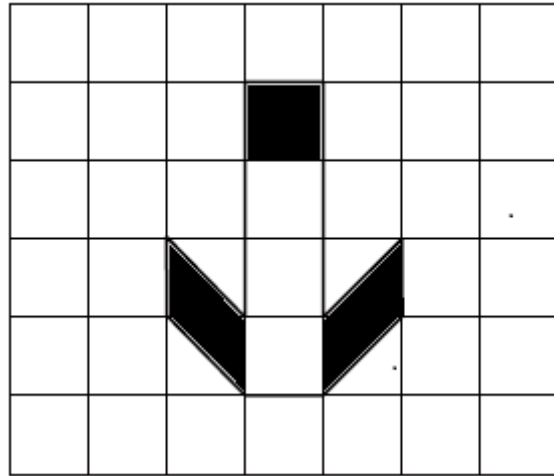


**Work out the height of the five boxes.**

*(3 marks)*

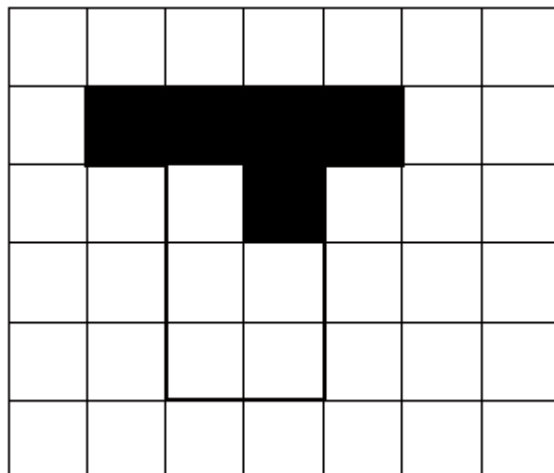
17)

a) What **fraction** of the shape below is shaded? Give your answer as simply as possible.




(1 mark)

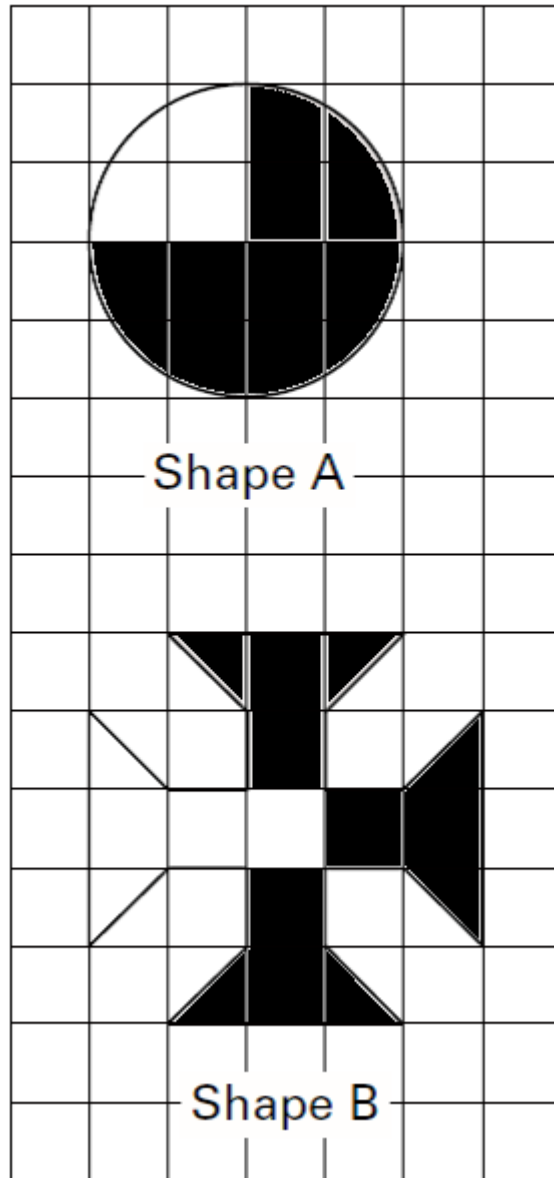
b) What **percentage** of the shape below is shaded?




(1 mark)



c) Which of the two shapes below has a greater percentage shaded?  
**Explain how you know.**



(2 marks)

**18) Round each of the following measurements to the accuracy given in brackets.**

a) 7.05 cm (nearest cm)

(1 mark)

b) 13,689 km (nearest one thousand km)

(1 mark)

c) 7.28 cm (nearest mm)

(1 mark)

**19) Write the following numbers in order of size, starting with the smallest.**

0.39       $\frac{3}{10}$       0.4       $\frac{37}{100}$       0.301

(3 marks)

**20) Look at this multiplication. It shows how you can write 7140:**

$$1 \times 2 \times 2 \times 3 \times 5 \times 7 \times 17 = 7140$$

a) Write 420 in the same way by filling in the gaps below.

$$1 \times 2 \times 2 \times 3 \times \square \times \square = 420$$

(2 marks)

b) Write down the answer to  $7140 \div 420$

(1 mark)

21) I have a bag containing red, blue and white counters. A counter is chosen at random from the bag. There are 36 red counters in the bag and the probability of choosing a red counter is  $\frac{3}{5}$ . The bag contains 5 blue counters. **How many white counters are there in the bag?**

(2 marks)

22) On a farm 80 cattle gave birth. 45% of the cattle gave birth to two calves. The rest of the cattle gave birth to one calf.

**In total, how many calves were born?**

(2 marks)

**23) Look at the list of numbers below.**

**5      13      25      30      47      80      121**

a) Which two of the numbers have an odd number of factors?

(1 mark)

b) Give another example of a number with an odd number of factors.

(1 mark)

c) These numbers have a special name. What is it?

(1 mark)

d) Which three of the numbers are prime numbers?

(1 mark)

e) Using each of the **first four** numbers in the list once (5, 13, 25, 30) and any of the four operations (+ - ÷ ×) show how you can make 40.

(You must use **all** the four numbers and use each number **only once**. You can use any of the + - × ÷ as many times as you like and you do not need to use all of them).

(2 marks)

**24) In September 2019 Rebecca's age was 4 times Anna's age. Mary was 7 years older than Anna and Rebecca was 2 years older than Mary.**

|  |
|--|
| <b>How old were the three girls in September 2019?</b> |
| <br><br><br><br><br><br><br><br><br><br>               |

*(2 marks)*

**End of Examination**