THE QUEEN'S SCHOOL

HONOUR WISDOM

Write your number here

ENTRANCE EXAMINATION

MATHEMATICS

45 MINUTES

WRITE YOUR NAME IN CAPITAL LETTERS IN THIS BOX

DO NOT WRITE IN THESE BOXES

SPECIMEN

Instructions

- **You will need a pen, pencil and ruler.**
- **You must NOT use a calculator.**
- **Write your answer on the lines provided.**
- **You should show all your working on this paper. We want to see how you go about answering questions, even if they are wrong.**
- **Cross out any wrong working clearly and neatly and DO NOT rub it out.**
- **Do NOT worry if you cannot attempt a question, just leave it and go on to the next question. Answer as many questions as possible but some of the questions will take longer.**

1. **Add** 4536
627 +
418 +

_____

2. **Subtract** 506
- 59

_____

3. **Write down**

a) 236 cm in meters Answer a)……

b) 0·07 as a fraction Answer b)……

c) 5:39pm using the 24 hour clock Answer c)……

d) 2·45 kg in grams Answer d)…….g

e) 867 to the nearest 10 Answer e)……

f) the number of sides on a pentagon Answer f)……

g) 10% as a fraction Answer g)……

h) the next prime number after 17 Answer h)……

i) $\frac{9}{100}$ as a decimal Answer i)……

4. Write down the next number in each of these sequences

a) 11, 15, 19, 23, ……

b) 17, 12, 7, 2, ……

c) 2, 4, 7, 11, ……

5. Find the **total** of 1·7 + 17 + 0·17

Answer……

6. Circle **TWO** numbers from this list, which **multiply** together to give 1 million (=1 000 000).

2, 5 000, 50 000, 2 000, 200, 50, 20

7. One length of my local swimming pool is 25 m.
How many lengths must I swim to cover a distance of 1·5 km?

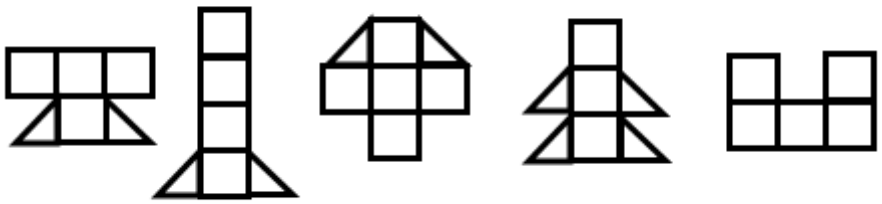


Answer……

If it takes me 45 minutes to swim the 1·5 km how long would it take me to swim 1km if I swim at the same speed?

Answer……

8. Circle the shape that has a different area from the others.





9. I have FIVE coins in my pocket.
They add up to 77p.
What are the coins?

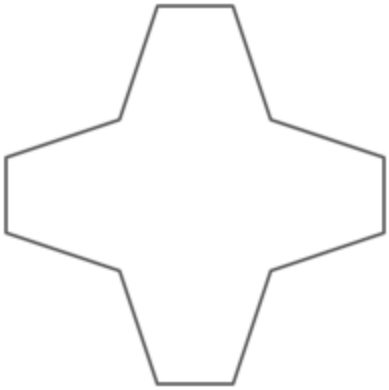
…….., …….., …….., …….., ……..

10. Write the following numbers in order of size starting with the **SMALLEST.**

0·56, 0·506, 0·605, 0·65, 0·056

…….., …….., …….., …….., ……..

11. Draw **ALL** the lines of symmetry on this shape.



12. 

Biscuits are sold in packets of 12.
How many packets will I need to buy if I want 148 biscuits?

Answer……

13. My train was 17 minutes late when it arrived at the station at 17·05.
What time was it due to arrive at the station?



Answer……

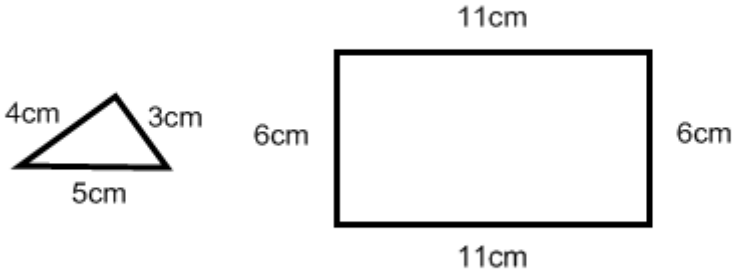
I got to the station at 4·35pm to catch the train.
How long did I have to wait for the train to arrive at the station?

Answer……

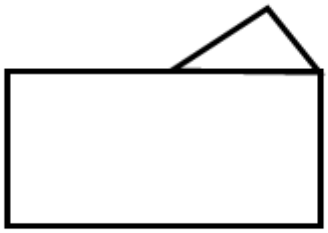
14. Circle the fraction from this list, which is closest to 1.

$\frac{5}{7}$, $\frac{2}{3}$, $\frac{3}{5}$, $\frac{7}{8}$, $\frac{8}{9}$, $\frac{7}{10}$

15. The dimensions of a rectangle and triangle are given. The diagrams are not drawn accurately.



They are joined together to make a new shape.



What is the perimeter of this new shape?

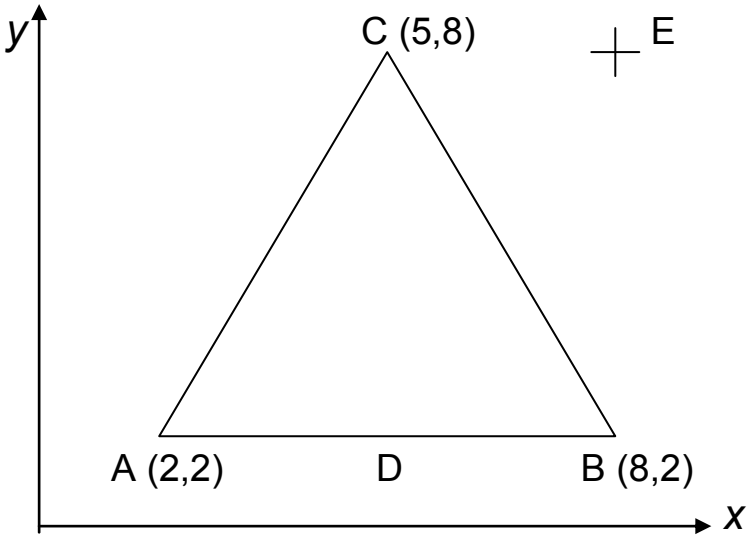
Answer……

16. What is the angle between the hands of this clock?



Answer……

17.



A is the point (2, 2), B is the point (8, 2) and C is the point (5, 8).
D is the mid point of the line AB.
Write down the co-ordinates of the point D

Answer D (……,……)

The point E is on a horizontal line through C and is vertically above B.
Write down the co-ordinates of the point E

Answer E (……,……)

18. Alison went to the supermarket.
She bought two cans of cola costing 53p each, three packets of crisps costing 27p each and a large bar of chocolate that costs £1.24.
How much change did she get from £5?



Answer……

19. The test scores of five pupils were:

9, 10, 9, 7, 5

What is the mean (or average) score?

Answer……

When a sixth pupil sat the test the mean score stayed exactly the same.
Find the score of the sixth pupil.

Answer……

20. What is 1 ½ times 5·6?

Answer……

21. Concert tickets for 4 adults cost a total of £62.
Children are admitted at half price.
What would it cost for 2 adults and a child to attend the same concert?



Answer……

22. $\frac{1}{6}$ of this box of chocolates are white chocolate. If there are 30 chocolates in the box, how many are white chocolate?



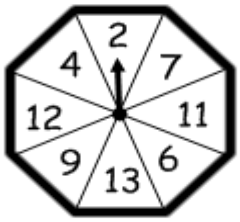
Answer……

In the same box 10 are milk chocolates.
What fraction, of all the chocolates, are milk chocolate?

Answer……

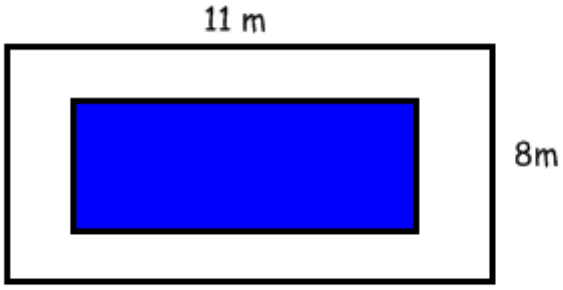
23. The arrow is spun and it has an equal chance of stopping at any of the numbers. Is it

A. More likely to land on a prime number than not a prime number?
B. Just as likely to land on a prime number as not a prime number?
C. More likely to land on a number that is not a prime number rather than a prime number?



Answer……

24.



A path of width 1.5 m is built around the outside of a pond. The dimensions of the path are shown.
What is the area of the pond?
Make sure you state the units.

Answer……

25. It costs £400 to carpet a room measuring 2 metres by 3 metres. How much would it cost to carpet another room measuring 4 metres by 6 metres with the same carpet?



Answer……

26. 4 CDs and 2 DVDs cost £46.
3 CDs and 2 DVDs cost £39.



Find the cost of

a) one CD

Answer……

b) one DVD

Answer……

27. **a * b = a x a + b**,

so 5 * 7 = 5 x 5 + 7
5 * 7 = 32.

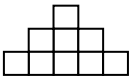
a) Find 2 * 5

Answer……

b) Find d if d * 3 = 19

Answer……

28.

Pattern Number	Pattern	Number of Blocks
1		1
2		4
3		.....
4		.....

Fill in the total number of blocks in pattern numbers 3 and 4.
Without drawing a diagram what is the total number of blocks on the 8^{th} pattern?

Answer……

29. Fill this square using the numbers 1,2,3,4 and 5 so that each of these numbers appears just once in each row, once in each column and once in each diagonal.

3	4			5
2				
		2		
			1	
				4

The End

Now check your answers.