

# **WOODHOUSE GROVE SCHOOL**

**11+ ENTRANCE EXAMINATION**

# **MATHEMATICS**

## **SAMPLE QUESTIONS**

**TIME ALLOWED FOR SECTION A: 25 MINUTES**

SHOW ANY NECESSARY WORKING IN THE SPACES UNDER THE QUESTIONS. YOU MAY ALSO WORK ON THE BACK OF THE QUESTION SHEETS. WRITE YOUR ANSWERS IN THE BOXES.

**SECTION A**

Q		Answer	Q		Answer
1.	$9 + 6 =$		11.	$9 - 1 + 12 - 4 =$	
2.	$83 + 4 + 5 + 7 =$		12.	$6 + 7 \times 1 \times 4 =$	
3.	$77 + 88 =$		13.	$19 \times 14 \times 0 \times 7 =$	
4.	$32 - 11 =$		14.	$13 + 5 \times 2 =$	
5.	$3000 - 63 =$		15.	$24 \div 8 - 3 =$	
6.	$7 \times 8 =$		16.	$5 \times 5 \times 5 =$	
7.	$32 \times 6 =$		17.	$5 \times 4 \times 3 \times 2 \times 1 =$	
8.	$360 \div 30 =$		18.	$2025 \div 5 =$	
9.	$54 \div 6 =$		19.	$125 \div 5 \times 4 =$	
10.	$1600 \div 40 =$		20.	$\frac{6\ 000\ 000}{2\ 000} =$	

Q		Answer
11.	Write in figures eight thousand, three hundred and forty two.	
12.	Write down the smallest number which can be divided exactly by 6 and 14.	
13.	A plane has 32 rows of seats, each row has 8 seats. How many people can fly on the plane?	
14.	Rope is made in rolls 30m long. How many complete rolls must be bought to reach a distance of 85m?	
15.	A school has 670 pupils. 380 are girls. How many are boys?	
16.	75 square bricks are to be put in a box which holds 6 bricks along its length and 6 bricks across its width. The bricks are packed in layers. How many bricks are there in the top layer?	
17.	A pack of six cans costs £4.50. Each can costs 80p on its own. How much does the six pack save the buyer?	
18.	A woman earns £32,000 per year. She pays $\frac{1}{4}$ of this in tax. How much does she take home?	
19.	What is the bill for a pair of shoes costing £43.00 and two pairs of socks costing £7.50 each?	
20.	10 people travel by train. Full fare tickets cost £13.50. Apex tickets cost £9.60. How much can the group save by using Apex tickets?	
21.	A train leaves at 10.00am and should take 2 hours 30 mins, to reach its destination. It arrives 7 minutes early. At what time does it arrive?	
22.	Write down half of 72 cars	
23.	Write down a third of 51 hens	
24.	Write down one tenth of £20,000	
25.	$x + 7 = 14$ :      : Find x	x =
26.	$y - 6 = 7$ : Find y	y =
27.	$3z - 1 = 20$ : Find z	z =
28.	$w \div 8 = 4$ : Find w	w =

29 .	$749 + 852 + 3821 + 88$  Answer: ..... .	33 .	$807 \times 31$  Answer: ..... .
30 .	$8923 - 7411$  Answer: ..... .	34 .	$593 \times 299$  Answer: ..... .
31 .	$85 \times 73$  Answer: ..... .	35 .	What is the remainder when 3534 is divided by 35  Answer: ..... .
32 .	$3248 \div 8$  Answer: ..... .	36 .	$(62 - 58) \times (62 + 58)$  Answer: ..... .

**SECTION B**

	<b>Question 1</b>	<b>Answer</b>										
a)	I have spent $\frac{3}{5}$ of my money. What fraction of my money is left?											
b)	Find $\frac{2}{5}$ of £250											
c)	Find $\frac{3}{7}$ of 21											
d)	Shade 30% of the grid. <div style="text-align: right; margin-top: 20px;"><table border="1" style="display: inline-table;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table></div>											
e)	From the list of fractions, pick the two which have the same value. Write them in the box.  $\frac{3}{5}$ , $\frac{4}{12}$ , $\frac{5}{7}$ , $\frac{1}{3}$ , $\frac{3}{6}$											

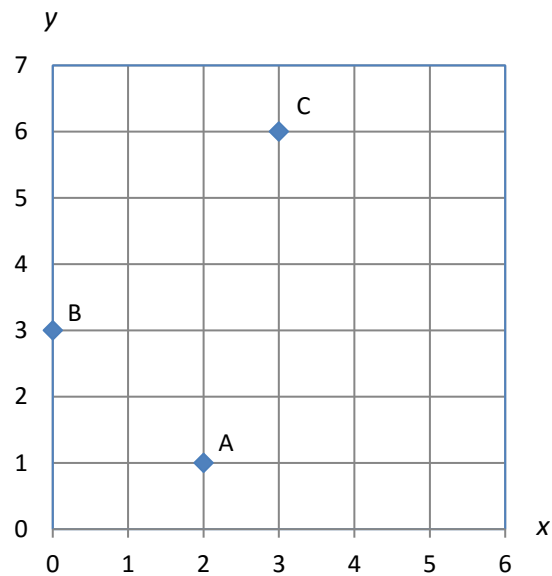
		Answer
f)	How many minutes are there in 3 hours?	
g)	What fraction of a millennium is a century?	
h)	A rugby match has two halves of 40 minutes each. There is 6 minutes injury time in the first half and twice as much in the second half. Ten minutes are given for the break at half time. What is the total length of the match?	
i)	Add 1100m, 700m and 200m. Give your answer in km.	
j)	The winner of a 6000km yacht race finishes 85km ahead of the next boat. How far has the second boat gone at his time?	
k)	The height of a two storey house is approximately i) 100cm    ii) 10m    iii) 100m    iv) 10km Select the best estimate	
l)	A lorry weighs 2 tonnes and carries 50 sacks each holding 10kg. How much does the lorry and its load weigh, in tonnes? (1 tonne = 1000kg)	
m)	A reasonable weight for a 10 year old boy is i) 40 grammes    ii) 400 grammes    iii) 40kg    iv) 4 tonnes	
n)	Find the perimeter of a square with sides of 60cm. Give your answer in metres.	
o)	A rectangle has an area of 72 square metres. The length of one side is 12 metres. Find the length of the other side.	

## QUESTION 2

Fill in the next two empty spaces

- a) 1, 3, 5, 7, ..... ..
- b) 2, 5, 8, 11, ..... ..
- c) 1, 4, 9, 16, ..... ..
- d) 1; 2,3; 4,5,6; 7,8,9,10; .....; .....

## QUESTION 3



What are the co-ordinates of:

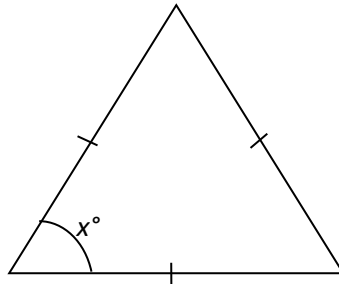
- i) Point A? (.....)
- ii) Point B? (.....)
- iii) Point C? (.....)

Point D is the fourth corner of the rectangle ABCD

- iv) What are the co-ordinates of D? (.....)

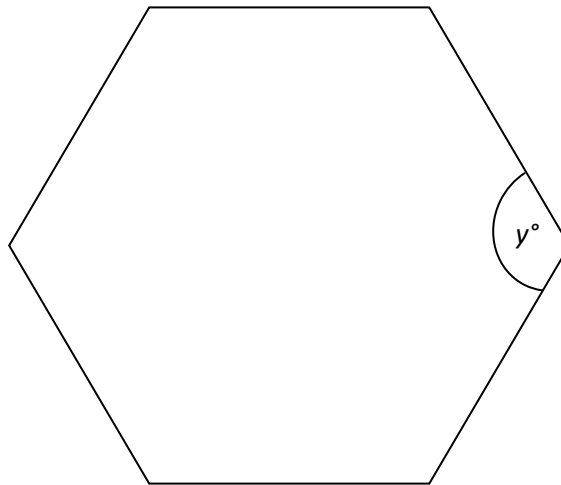
**QUESTION 4**

An equilateral triangle has three sides of the same length and three angles all of the same size  $x^\circ$ .



a) What is the size of each angle?  $x^\circ = \dots\dots\dots$

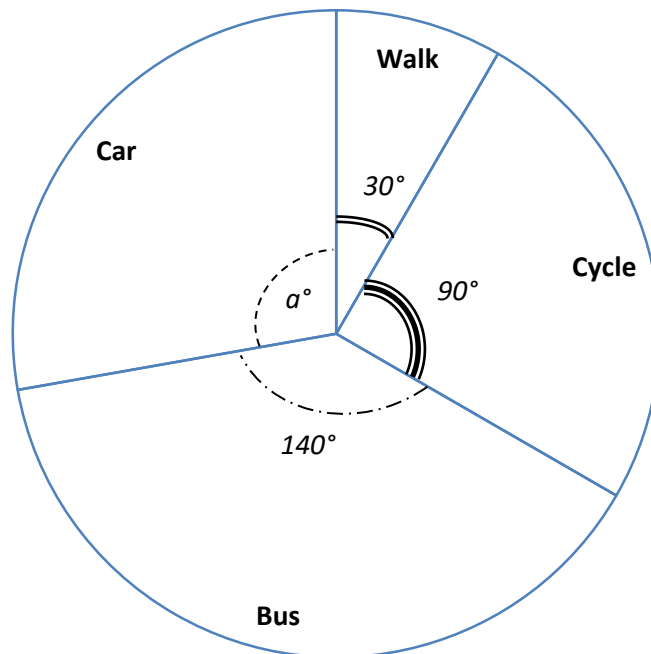
b) On the diagram of a hexagon given below show how to fit six equilateral triangles inside a hexagon.



c) What is the angle of  $y^\circ$ ?  $y^\circ = \dots\dots\dots$



**QUESTION 5**



a) What is the size of the missing angle  $a^\circ$  in the pie chart?  $a^\circ = \dots\dots\dots$

The pie chart shows how all children at a school travel to school.

b) Which is the most popular method of travel?  $\dots\dots\dots$

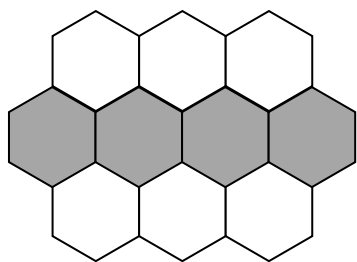
c) How many times bigger than the number who walk to school is the number who cycle to school?

$\dots\dots\dots$

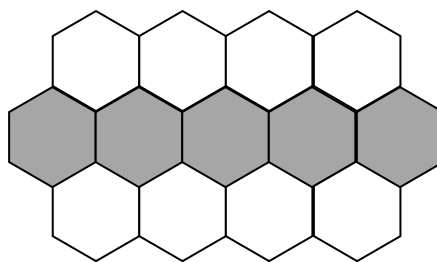
d) If 42 children travel by bus find the number of children in the school.

$\dots\dots\dots$

**QUESTION 6**



Pattern 1



Pattern 2

The length,  $l$ , of a hexagon pattern is the number of hexagons in the middle row.

The total number of hexagons in the pattern is  $t$ .

The first pattern has  $l = 4$  ;

$$t = 10$$

Find:

- a)  $l$  and  $t$  for the second pattern

$$l = \dots\dots\dots$$

$$t = \dots\dots\dots$$

- b)  $t$  when  $l = 6$  (draw the pattern if you wish)

$$t = \dots\dots\dots$$

- c) a rule connecting  $l$  and  $t$

rule:  $\dots\dots\dots$

### QUESTION 7

Equations for  $x$  are given below.

A value for  $x$  is given as the answer to the equation. Some are right and some are wrong.

In each case, say whether the value of  $x$  is right or wrong.

Where the value for  $x$  is wrong, work out the right value.

a)  $x + 7 = 9$                        $x = 2$

b)  $2x = 24$                          $x = 13$

c)  $x^2 = 25$                          $x = 12 \frac{1}{2}$

d)  $x^2 + 3x = -2$                      $x = -2$