St. Francis' College
Practice Entrance Examination
for entry into Year 9



Mathematics Paper
Time allowed – 1 hour

Name:_____

Date of birth:_____

Present school:_____

Please attempt as many questions as you can.

If you cannot do a question leave it out and if you have time you can come back to it at the end.

You should show **all** of your working out in the spaces provided.

Calculators are **not** allowed.

1. Write down

a) 7% as a decimal .....

b) The square root of 121 .....

c) 4.783 kilometres as metres .....

d) The tenth prime number .....

e) 0.02 x 0.8 .....

f) The name of a triangle with two equal sides and two equal angles.

.....

g) The lowest common multiple of 6 and 10 .....

h) 7/12 of an hour in minutes .....

i) 11/40 as a percentage .....

j) 0.48 as a fraction in its simplest form .....

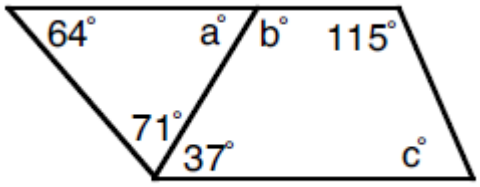
k) The thirteenth square number .....

l) The highest common factor of 36 and 90 .....

m) $12cm^2$ as mm^2 .....

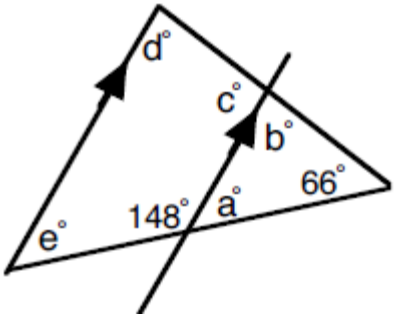
2. Find the angles marked with letters.

a)



a = b = c =

b)



a = b = c = d = e =

3. a) The price of a sofa is £720. It is reduced by 30% in a sale. What is the new price of the sofa?

b) The price of a chocolate bar is reduced from 80p to 68p. Calculate the percentage decrease in the price.

4. In a class of 20 pupils 9 play hockey, 6 play netball and the rest play tiddlywinks! If a pupil is selected at random from the class find the probability that:

a) They play tiddlywinks

b) They play hockey or netball

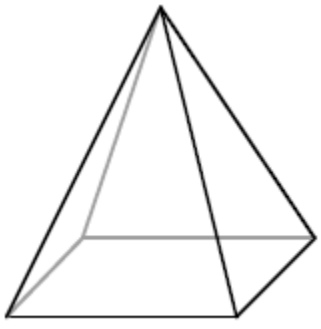
c) They do not play hockey

5. Calculate each of these giving your answer in its simplest form.

a) $\frac{3}{7} + \frac{2}{9} =$

b) $2\frac{8}{11} - 1\frac{3}{5} =$

6. a) How many faces, edges and vertices has this solid?

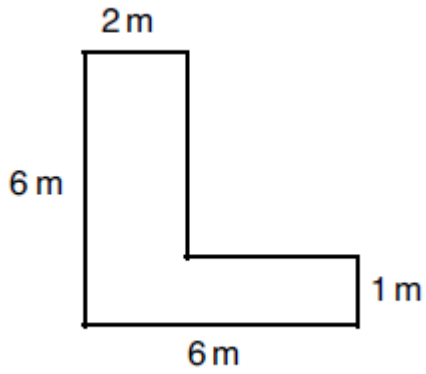


Faces _____ Edges _____ Vertices_____

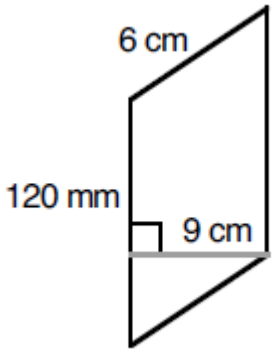
b) What is the name of this solid? _____

7. Find the area of the following shapes.

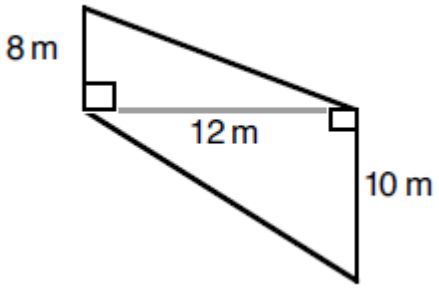
a)



b)



c)



8. Work out the answers to the following questions

a) $4 \times 2 - 6 \div 3 + 3 \times 2 \times 4 =$

b) $2 \times (7 - 2) \div (16 - 11) =$

9. Expand the brackets and fully simplify

a) $5x(2y - 3x)$ b) $7(3r - 1) - 4(r + 6)$

10. Round the following numbers to the given number of decimal places.

a) 2.1845601. (2 d.p.)

b) 19.96164 (1 d.p.)

11. Solve

a) $5x - 11 = 29$ b) $6(1 - 2x) = 42$

c) $4 + 2x = 5x - 1$

12. Share 104 biscuits between Milly and Tilly in the ratio 7 : 1

13. Florence carried out a survey of the number of packets of crisps eaten by her friends in a week. She put the results in a frequency table shown below.

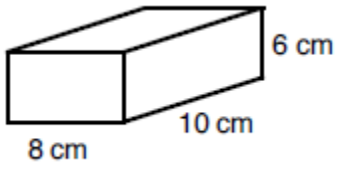
Number of packets of crisps	Frequency
0	5
1	2
2	4
3	5
4	7
5	1
6	0
7	6

Calculate a) the mean

b) the mode

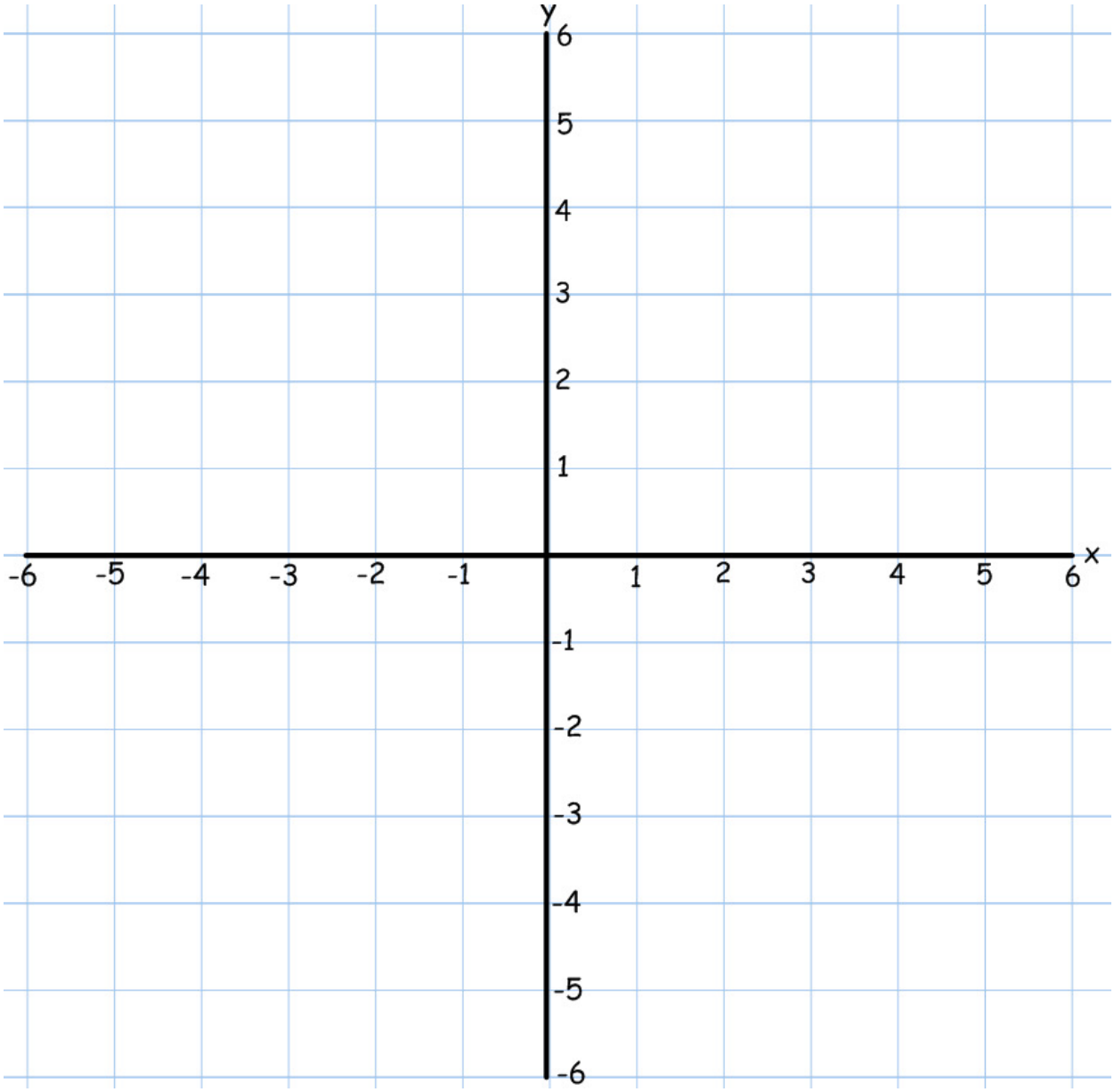
c) the range

14. Find the volume of this cuboid



15. Draw the following 4 lines on the axis below. Clearly label each line.

a) y = 3 b) x = -5 c) y = -x



16. This table shows the first five terms in a sequence. Fill in the missing values.

Term	Value
1	5
2	12
3	19
4	26
5	33
6	
	68
n	

17. Two rectangular lawns are made so that each has the same sized perimeter. The first has a length of $3x$ metres and a width of $2x$ metres.
The second has a length of $x + 6$ metres and a width of x metres.

a) Use this information to form an equation.

b) Solve this equation to find the perimeter of each lawn.

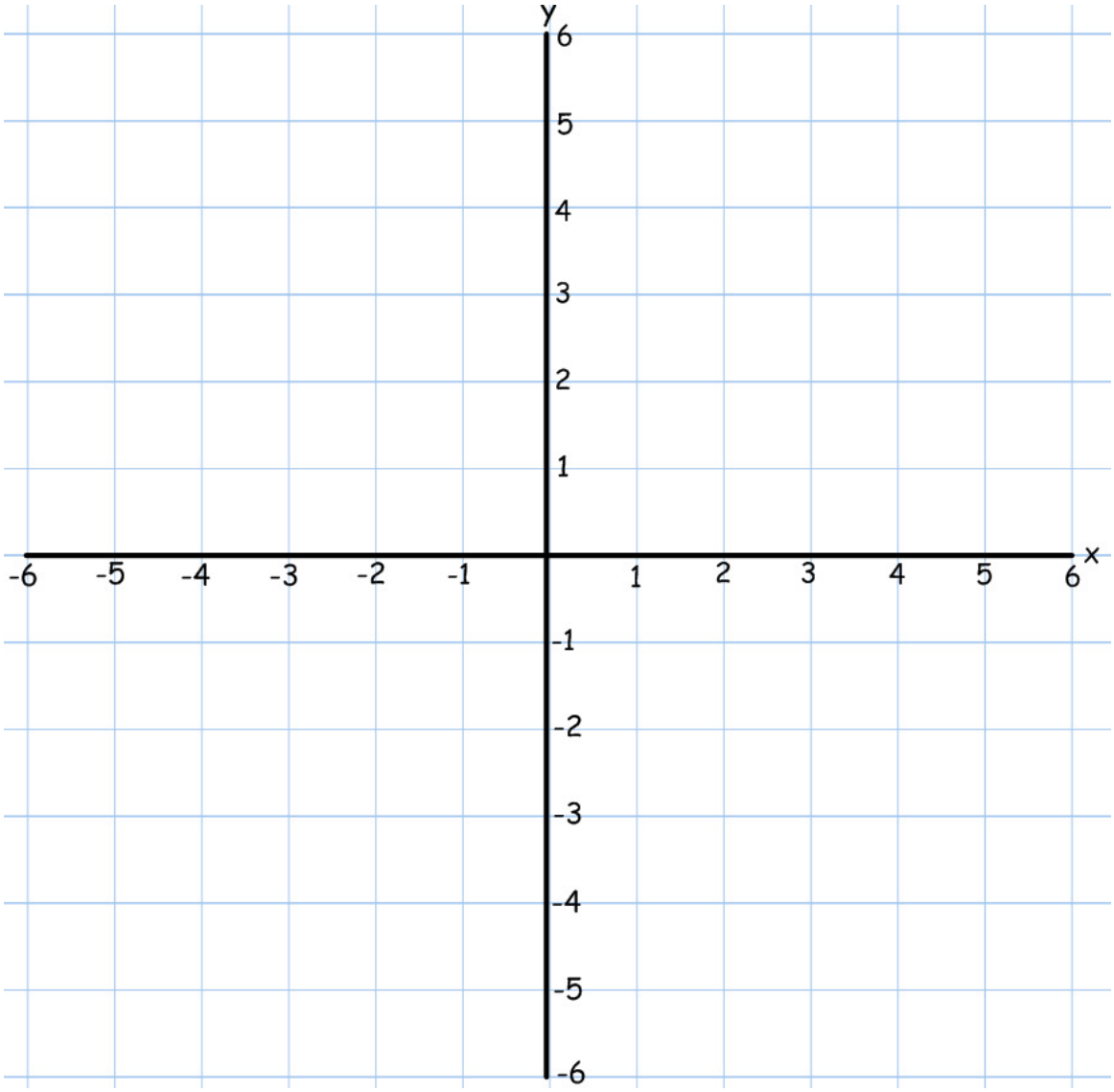
c) State the length and width of each lawn.

18. On the grid below draw a triangle with coordinates (1 , 1) (1 , 2) and (3 , 1). Label it A.

a) Rotate A 90° clockwise, centre (0 , 0). Label it B.

b) Reflect A in the y axis. Label it C.

c) Translate A 6 units left and 4 units down. Label it D.



19. a) 4485 ÷ 13 =

b) 2.76 x 5.9

20. Among the children in a certain family, each child has at least one brother and at least one sister. What is the smallest possible number of children in the family?

21. Travelling by train from Edinburgh to London, I passed a sign saying 'London 150 miles.' After 7 more miles, I passed another sign saying 'Edinburgh 250 miles.' How far is it by train from Edinburgh to London?

22. The sum of three different prime numbers is 40. What is the difference between the two biggest of these three numbers?

23. At a holiday camp, the ratio of boys to girls is 3:4 and the ratio of girls to adults is 5:7. What is the ratio of children to adults in the camp? Give your answer in its simplest form.