

<p><b><u>PLACE VALUE, ROUNDING AND ESTIMATING</u></b></p> <p>a) Round 593.1276 to:</p> <p>i) 2 decimal places</p> <p>ii) 2 significant figures</p> <p>b) Estimate  <math>3175.9 \times 0.48</math></p>	<p><b><u>TYPES OF NUMBER</u></b></p> <p>a) Between 20 and 30, give:</p> <p>i) A multiple of 8</p> <p>ii) A square number</p> <p>iii) A prime number</p> <p>iv) A cube number</p> <p>b) What is the reciprocal of 3?</p>
<p><b><u>ARITHMETIC INCLUDING DECIMALS</u></b></p> <p>Convert these to decimals</p> <p>a) <math>\frac{3}{5}</math></p> <p>b) <math>\frac{7}{8}</math></p> <p>c) <math>\frac{1}{9}</math></p> <p>d) <math>\frac{4}{9}</math></p> <p>e) <math>\frac{1}{3}</math></p>	<p><b><u>NUMBER SQUARES</u></b></p> <p>a) Find the nth term</p> <p>i) 7, 11, 15, 19</p> <p>ii) 6, 18, 30, 42</p> <p>b) Given <math>3n - 2</math>, find the first three terms</p>
<p><b><u>FRACTIONS</u></b></p> <p>a) Work out:</p> $3 \times \frac{4}{5},$ <p>write your answer as a mixed number.</p> <p>b) Work out:</p> <p>i) <math>\frac{4}{7} - \frac{1}{3}</math></p> <p>ii) <math>\frac{2}{5} \div \frac{3}{4}</math></p>	<p><b><u>PERCENTAGES</u></b></p> <p>a) Put in order, smallest first</p> $\frac{4}{5} \quad \frac{7}{8} \quad 0.83 \quad \frac{3}{4} \quad \frac{13}{20}$ <p>b) Calculate 15.3% of 9570</p>
<p><b><u>NEGATIVES/CALC/BIDMAS/INDICES</u></b></p> <p>a) Calculate <math>\frac{3.7^2 \times 5.9}{1.1 - 0.85}</math></p> <p>b) Calculate the cube root of 729000</p> <p>c) Calculate the reciprocal of 1.6</p> <p>d) <math>-3 \times \square = 21</math>    <math>-3 - \square = 5</math></p>	<p><b><u>RATIO</u></b></p> <p>A fruit juice drink uses apple, orange and blackcurrant in the ratio 3:2:4. I have 600ml of blackcurrant how much fruit juice drink do I have altogether. Give your answer in litres.</p>

**SIMPLIFY ALGEBRA/ SUBSTITUTION**

a) Simplify  $6p + 5q - 2q - 8q$

b) Simplify:

i)  $a^5 \times a^4$       ii)  $\frac{p^6}{p^3}$

c) If  $x = -4$ , what is the value of:

i)  $x^2 - 2x$

ii)  $x^3$

**ALGEBRA BRACKETS**

a) Expand and simplify

$5(2x + 3) - 4(x + 1)$

b) Expand and simplify

$(x - 3)(x + 5)$

**SOLVE EQUATIONS**

Solve:

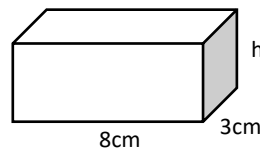
a)  $3x - 4 = 14$

b)  $2(2y - 1) = 5$

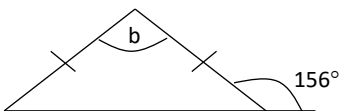
c)  $5p - 2 = p + 8$

**AREA/ PERIMETER/ VOLUME**

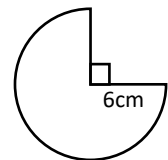
a) The perimeter is 25cm. Find its width.

b) Its volume is  $108\text{cm}^3$ . Find its height  $h$ .**ANGLES**

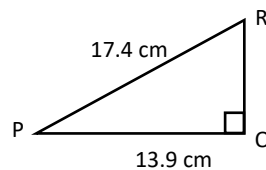
a) Calculate the sum of interior angles of a regular pentagon.

b) Calculate angle  $b$ .**CIRCLES/ PYTHAGORAS/MEASURES/ SPEED**

a) Find the area of the shape.



b) Find the length QR to 1dp.

**AVERAGES**

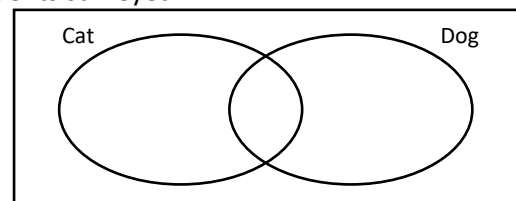
Averages	Frequency
4	18
5	36
6	19
7	42
8	5

a) Calculate the mean shoe size.

b) What is the median shoe size.

**NEW CONTENT MISCELLANEOUS**

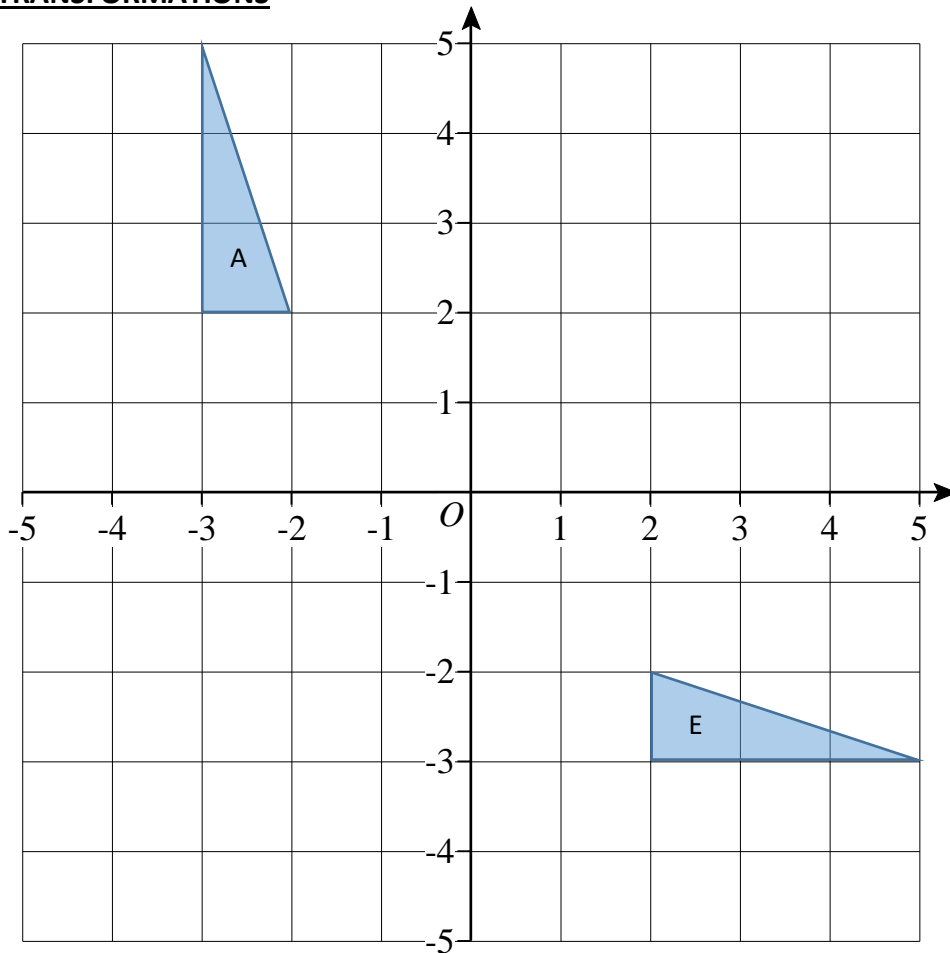
In this Venn diagram. 1 person had both a cat and a dog. 17 had neither. 15 had a cat. There were 50 students surveyed.



a) Complete the Venn diagram.

b) What is the probability a random person chosen has a dog?

## TRANSFORMATIONS



- Reflect A in the line  $x = -1$ . Label it B.
- Rotate A,  $90^\circ$  clockwise, centre  $(-4, 3)$ . Label it C.
- Translate A in the vector  $\begin{pmatrix} 2 \\ -5 \end{pmatrix}$ . Label it D.
- Describe the single transformation to get from A to E.

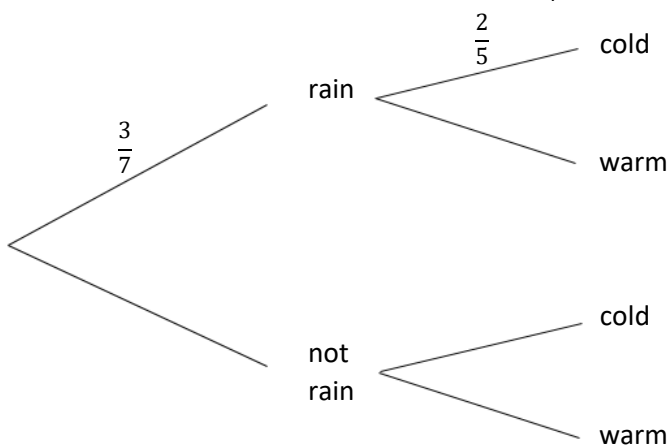
## STATISTICAL DIAGRAMS/ PROBABILITY

- a) The table show the probabilities when spinning a spinner labelled 1 to 4.

Number	1	2	3	4
Probability	0.2	0.16	0.38	

- Calculate the probability of getting a number 4 on the spinner.
- I spin the spinner 600 times. How many times would you expect the number 1 to come out?

- b) The probability it rains on any day is  $\frac{3}{7}$ . The probability it is cold on any day is  $\frac{2}{5}$ .



- Complete the tree diagram.
- Calculate the probability it is both cold and rainy.

## GRAPHS

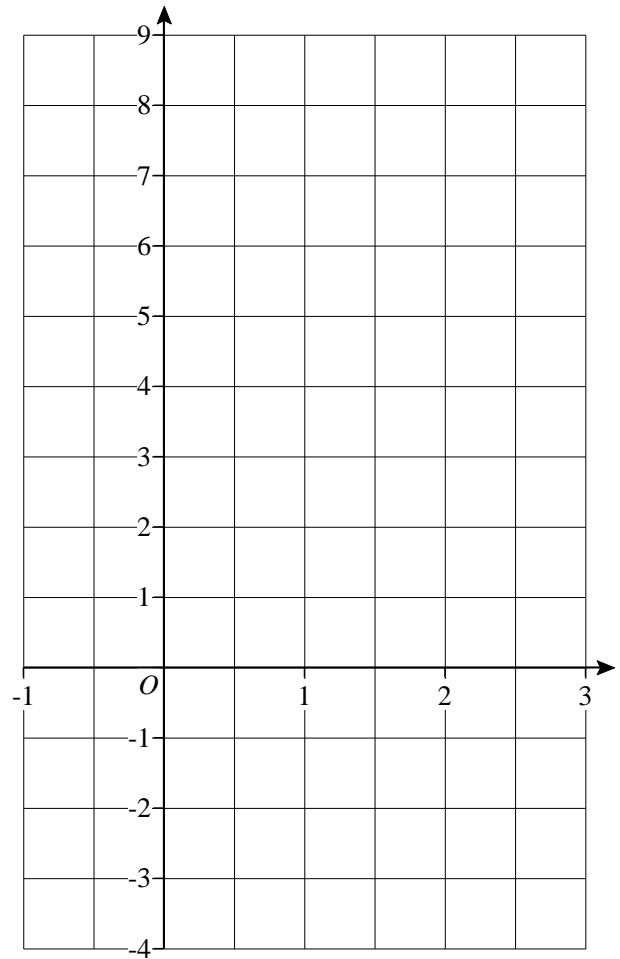
- a) Complete the table and draw the graph of  $y = 3x - 1$ .

x	-1	0	1	2	3
y					

- b) Given the graph of  $y = 4x - 5$ .

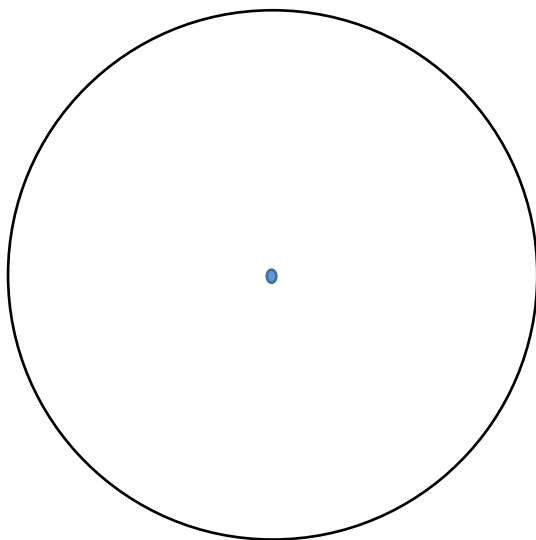
Give the:

- i) Gradient
- ii) Coordinates of the y-intercept



## CONSTRUCTIONS

- a) Construct a regular octagon using the circle below.



- b) Construct the perpendicular bisector of AB.

