Sutton Maths Class

Year 5 - Week 24 - Co-ordinates and Graphs

Starter:

1 $6\frac{1}{4}\,\frac{2}{8} + 3\frac{3}{8} =$ $9\frac{5}{8}$

2 $\frac{1}{6} \div \frac{1}{6} =$ 1

3 What is 90.5% as a decimal? 0.905

$3 \div 8 \Rightarrow$ $8\overline{)3.000}$ $= 0.375$

4 What is $7\frac{3}{8}$ as a decimal? 7.375

5 $0.9 \times 400 =$ 360

6 $10 \div 0.5 =$ 20

7 Find $\frac{9}{10}$ of 780kg. $78 \times 9 = 702$

$$\begin{array}{r} 78 \\ \times\ 9 \\ \hline 702 \\ \hline 7 \end{array}$$

8 Decrease 800ml by 20% $10\% = 80$ $20\% = 160$ $800 - 160 = \underline{640}$

9 Calculate $-88 \overset{+}{-} -80 =$ -8

10 Write 60 as a product of primes. $60 = 2 \times 2 \times 3 \times 5$ $= 2^2 \times 3 \times 5$

60
6 10
2 3 2 5

11 'This lowest common multiple of 8 and 6 is 48'. True or False? 24

12 What is the next term: $\frac{6}{7}, \frac{7}{8}, \frac{8}{9}, \frac{9}{10},$ $\frac{10}{11}$

13 $\frac{16 - \overset{8}{2^3}}{10 - \underset{2}{6 \div 3}} =$ $\frac{8}{8}$ $= 1$

14 Split 450kg in the ratio of 3:1:1.
$270 : 90 : 90$

15 Find the n^{th} term of 80, 90, 100, 110, 120....
$10n + 70$

16 Solve $20 = 6x + 2$
$x = 3$

17* Solve $8 + 2x = 6x - 16$

$24 = 4x$ $\quad$ $\underline{x = 6}$

18** Solve $8 = \dfrac{5x - 1}{3}$. $\underline{x = 5}$

19 I roll a fair dice. What is the probability to lands on a multiple of 3? $\frac{2}{6} = \frac{1}{3}$

20* A triangle with base $40cm$ has an area of 200 cm^2. Find the height. 10cm

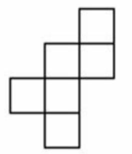
$\frac{1}{2} \times 40 \times h = 200$ $\quad$ $200 \times 2 = 400$ $\quad$ $400/40 = 10$

21* Find the perimeter of a rectangle with length 12cm and an area of 36 cm^2.

$\boxed{36cm^2}$ 12 $\quad$ $36 \div 12 =$ $\underline{3cm}$ $\quad$ $12 + 12 + 3 + 3 = \underline{30cm}$

22 How many faces does a triangular prism have? 5

23 'The following shape is the net of a cube'. True or false?



24 The volume of a cuboid is $360cm^3$. The width is 10cm and the length is 12cm. Find the height.

$12 \times 10 \times h = 360$

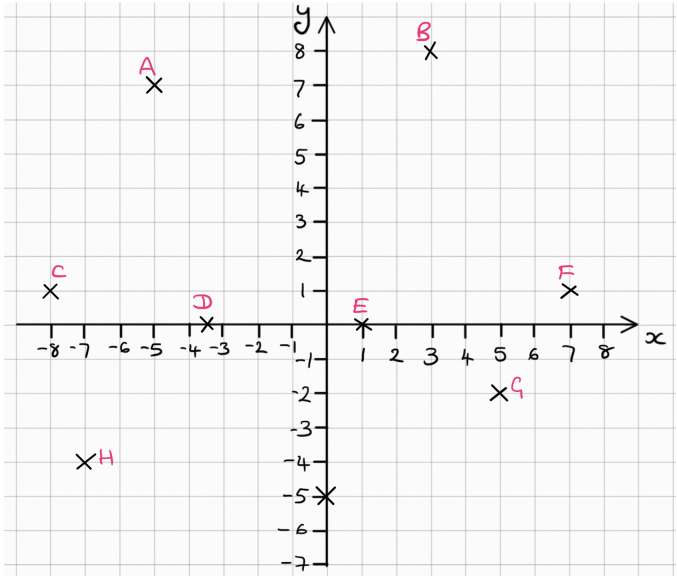
$120h = 360$

$h = 360 \div 120 = \underline{3cm}$

Sutton Maths Class

Co-ordinates and Graphs:

1 Fill in the co-ordinates of:



A (-5, 7) B (3, 8)

C (-8, 1) D (-3.5, 0)

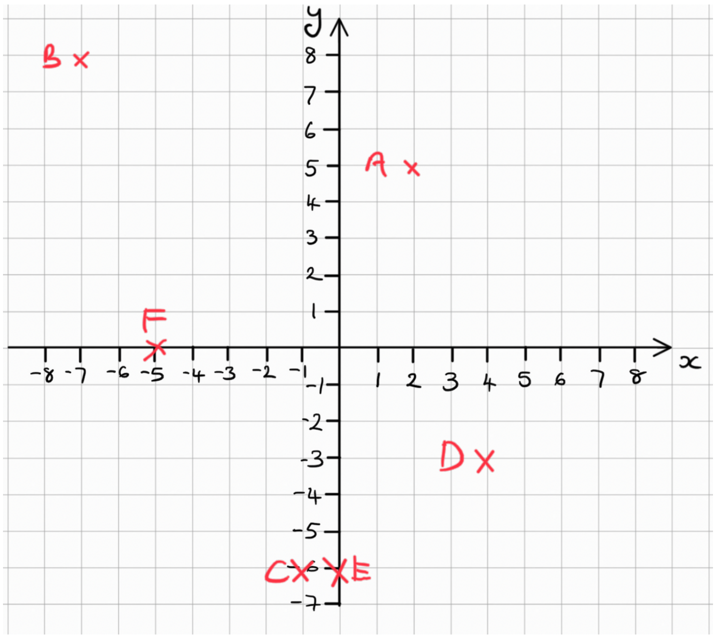
E (1, 0) F (7, 1)

G (5, -2) H (-7, -4)

2 Show the following co-ordinates on the graph:

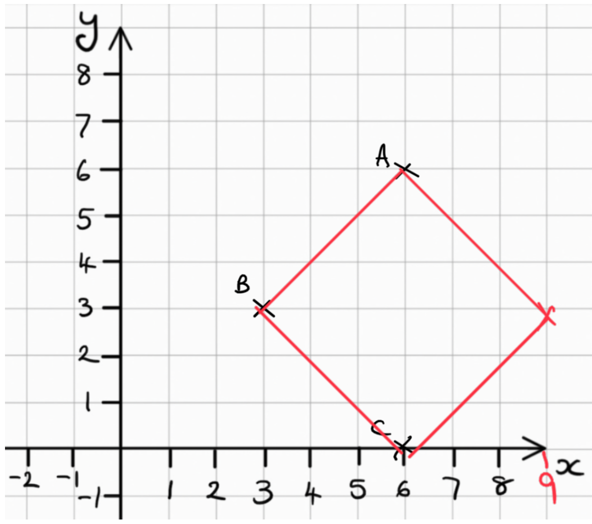
A (2, 5) B (-7, 8) C (-1, -6)

D (4, -3) E (0, -6) F (-5, 0)



3 ABCD forms a square. What are the co-ordinates of D?

(9, 3)



4 Fill in the co-ordinates of:

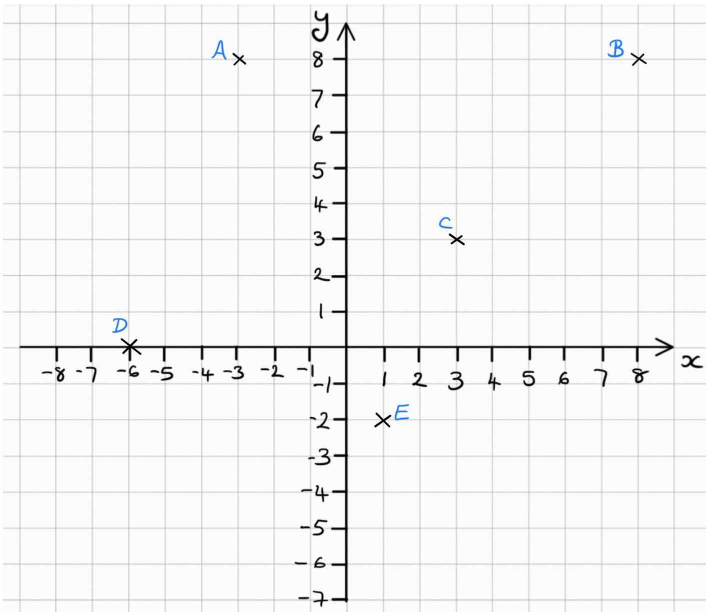
A (-3, 8)

B (8, 8)

C (3, 3)

D (-6, 0)

E (1, -2)



5 (a) Fill in the co-ordinates of:

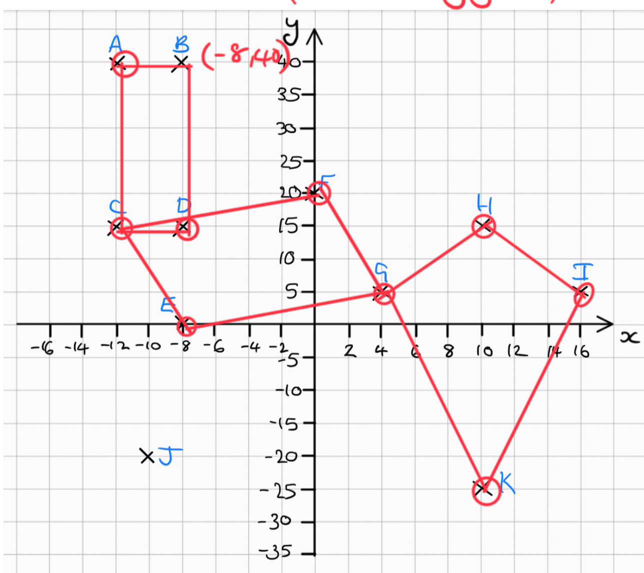
F (0, 20) J (-10, -20)

K (10, -25) G (4, 5)

(b) What shape do the coordinates (10,-25), (4, 5), (10, 15) and (16, 5) make? Kite or Quadrilateral (or polygon)

(c) What shape do the co-ordinates (4, 5), (-8, 0), (-12, 15) and (0, 20) make? Parallelogram or Quadrilateral (or Polygon)

(d) The co-ordinates (-12, 15), (-8, 15) and (-12, 40) and (-8, 40) form a rectangle. What is the last co-ordinate?



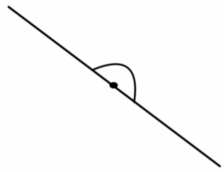
Sutton Maths Class

Key Facts For Starter

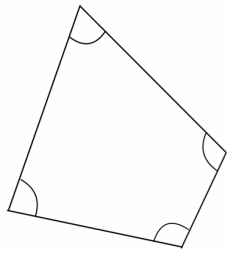
Fraction	Decimal	Percentage
$\frac{1}{2}$	0.5	50%
$\frac{1}{4}$	0.25	25%
$\frac{1}{5}$	0.2	20%
$\frac{1}{10}$	0.1	10%
$\frac{1}{100}$	0.01	1%
$\frac{1}{8}$	0.125	12.5%
$\frac{1}{3}$	$0.\dot{3}$	$33.\dot{3}\%$

Metric Units of Measure	Imperial Units of Measure
Length: 1 km = 1000m 1m = 100cm 1cm = 10mm Weight: 1 tonne = 1000kg 1 kg = 1000g 1g = 1000mg Capacity: 1 litre = 1000ml	Length: 1 mile = 1760 yards 1 yard (yd) = 3 feet 1 foot (ft) = 12 inches Weight: 1 stone = 14 pounds 1 pound (lb) = 16 ounces (oz) Capacity: 1 gallon = 8 pints

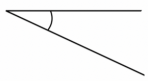
Approximate Equivalences (≈ means 'is approximately equal to')
Length: 8 km ≈ 5 miles (1 mile ≈ 1.6km) 1 yard ≈ 90 cm 1 foot ≈ 30 cm 1 inch ≈ 2.5 cm Weight: 1 ounce (oz) ≈ 30 grams (g) 1 kg ≈ 2.2 pounds Capacity: 1 pint ≈ 0.6 litre (l) 1 gallon ≈ 4.5 litres



ANGLES ON A STRAIGHT LINE **ADD UP TO 180°**

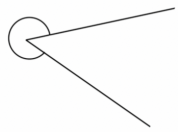


ANGLES IN A QUADRILATERAL **ADD UP TO 360°**

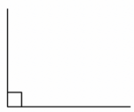


ACUTE ANGLE
LESS THAN 90°

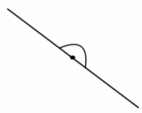
OBTUSE ANGLE
GREATER THAN 90°
LESS THAN 180°



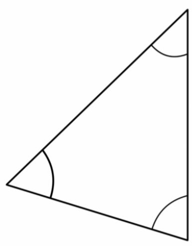
REFLEX ANGLE
GREATER THAN 180°



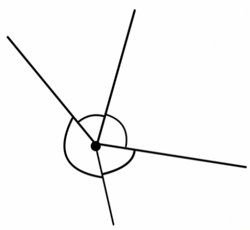
RIGHT ANGLE
90°



STRAIGHT LINE
180°



ANGLES IN A TRIANGLE **ADD UP TO 180°**



ANGLES AROUND A POINT **ADD UP TO 360°**

Months

30 days hath September, April, June, and November;
All the rest have 31, Excepting February alone,
And that has twenty-eight days clear, and twenty-nine in each leap year

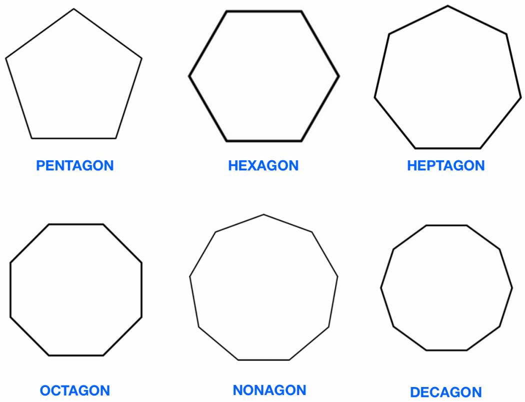
Time

1 millennium	=	1000 years
1 century	=	100 years
1 year	=	12 months = 52 weeks
1 week	=	7 days
1 day	=	24 hours
1 hour	=	60 minutes
1 minute	=	60 seconds

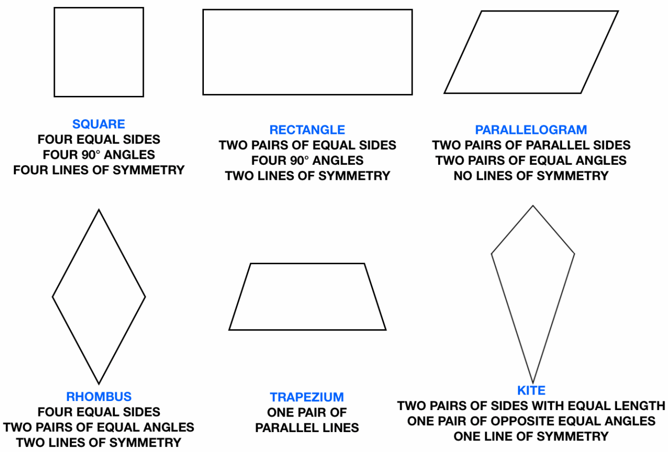
Sutton Maths Class

Regular Polygons

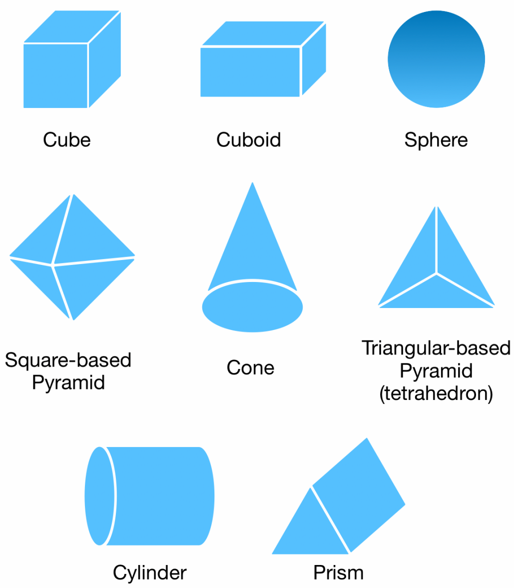
In a REGULAR polygon, ALL sides are EQUAL and ALL angles are EQUAL.



Quadrilaterals

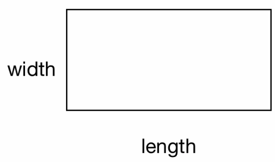


3D Shapes



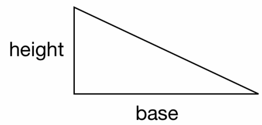
Area of Rectangle

A = length × width



Area of Triangle

$A = \frac{1}{2} \times \text{base} \times \text{height}$

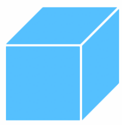


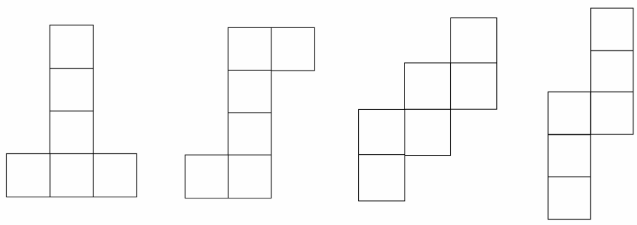
Prism

A **prism** has the same shape at both ends with rectangles joining them.
'If you slice the shape at any point between the two ends the shape in the middle is the same'.

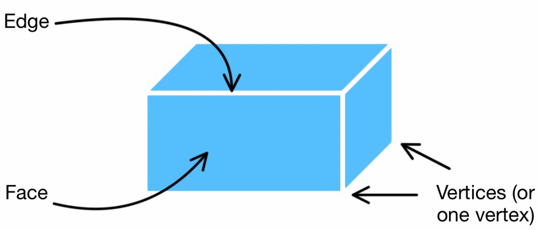
Nets

A **net** can be folded up to make a 3D shape. The following are some of the nets that make up a **cube** and will all 'fold up' to make the same shape:





Faces, Edges & Vertices



Volume and Capacity

Volume is the amount of space a 3D object takes up. This is measured in cubic units such as cm^3, m^3 and mm^3.

Volume of cuboid = length x width x height

Capacity is the maximum amount of water a container can hold. This is measured in litres and millilitres (**l and ml**).