

What is the formula for finding the perimeter of a square with side  $s$ ?

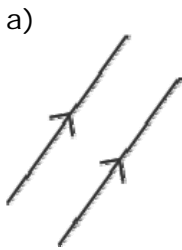
$$P = 4s$$

State two formulae to find the area of a triangle.

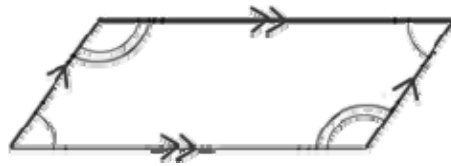
$$A = \frac{1}{2} \times \text{base} \times \text{height}$$

$$A = \frac{1}{2}ab\sin C$$

- a) Sketch two parallel lines.  
b) Sketch two perpendicular lines.



Sketch and label a parallelogram.



Describe a trapezium.

A quadrilateral with one pair of parallel lines

Name all the quadrilaterals which have two pairs of parallel lines.

Square  
Rectangle  
Rhombus  
Parallelogram

The circumference of a football is 70cm. Find its radius to 3 significant figures.

$$\begin{aligned} \text{Circumference} &= 2\pi r \\ r &= \frac{C}{2\pi} \\ &= \frac{70}{2\pi} \\ &= 11.1\text{cm} \end{aligned}$$

The diameter of a semicircle is 8.2cm. Find its area to 3 significant figures.

$$\begin{aligned} \text{Area}_{\text{semicircle}} &= \frac{1}{2}\pi r^2 \\ &= \frac{1}{2}\pi \times 4.1^2 \\ &= 26.4\text{cm}^2 \end{aligned}$$

What value do you get if you divide the circumference of a circle by the diameter?

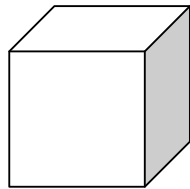
$\pi$  (pi)  
3.14159 ...

Describe a cuboid.

A solid with 3 pairs of rectangular faces

How many edges does a cube have?

12



How do you calculate the volume of a cuboid?

length  $\times$  width  $\times$  height

A regular polygon has interior angles of  $175^\circ$ . How many sides does it have?

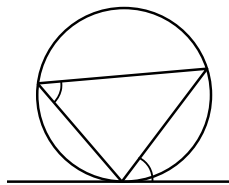
Number of sides =  $360^\circ \div$  exterior angle  
=  $360^\circ \div 5^\circ$   
= 72 sides

Work out the size of an interior angle in a regular nonagon.

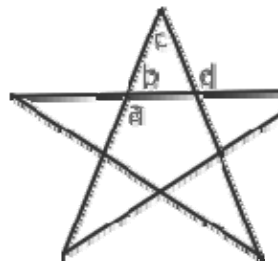
$\Sigma$  (interior angles) =  $180 \times (9 - 2) = 1260^\circ$   
interior angle =  $1260^\circ \div 9 = 140^\circ$   
**or**  
 $\Sigma$  (exterior angles) =  $360^\circ$   
exterior angle =  $360^\circ \div 9 = 40^\circ$   
interior angle =  $180^\circ - 40^\circ = 140^\circ$

Describe the alternate segment theorem.

The angle between a tangent and a chord is equal to the angle subtended in the alternate segment.



Calculate the angles in a regular pentagram (five pointed star).



a =  $108^\circ$   
b =  $72^\circ$   
c =  $36^\circ$   
d =  $108^\circ$

## Geometry and measures – Pick and mix revision cards

A rectangular wall measures 2.5m × 3m.  
How many square tiles with side 50cm  
will be needed to cover the wall?

$$5 \times 6 = 30$$

Give 6 litres as pints.

$$1 \text{ litre} = 1 \frac{3}{4} \text{ pints}$$

$$6 \text{ litres} = 10 \frac{1}{2} \text{ pints}$$

Convert 4.6m<sup>2</sup> to cm<sup>2</sup>.

$$1 \text{ m} = 100 \text{ cm}$$

$$1 \text{ m}^2 = 10000 \text{ cm}^2$$

$$4.6 \text{ m}^2 = 46000 \text{ cm}^2$$

(forty-six thousand)

Convert 3.6 hours to seconds.

$$1 \text{ hour} = 3600 \text{ seconds}$$

$$3.6 \text{ hours} = 12960 \text{ seconds}$$

The density of steel is 7700kg/m<sup>3</sup>.  
A block of steel has a mass of 1540kg.  
What is the volume of the block?

$$\text{density} = \frac{\text{mass}}{\text{volume}}$$

$$\text{volume} = \frac{\text{mass}}{\text{density}}$$

$$= \frac{1540}{7700}$$

$$= 0.2 \text{ m}^3$$

The point (2,4) lies on a horizontal line.  
What is the equation of the line?

$$y = 4$$

Give the midpoint of the line joining  
coordinates (-5,8) and (9,-13).

$$(2, -2.5)$$

Calculate the distance between (5,-1)  
and (3,7), leaving your answer in surd  
form.

$$h^2 = (5 - 3)^2 + (-1 - 7)^2$$

$$h = \sqrt{68}$$

$$= 2\sqrt{17}$$

<p>What three rules must be followed when giving bearings?</p>	<p>What information is needed to fully describe an enlargement?</p>
<p>Start from north Measure clockwise Give three figures</p>	<p>Scale factor Centre of enlargement</p>
<p>What information is needed to fully describe a rotation?</p>	<p>What information is needed to fully describe a reflection?</p>
<p>Angle of rotation Centre of rotation Direction of rotation (e.g. clockwise)</p>	<p>Equation of the mirror line</p>
<p>Give the number of lines of symmetry: a) H    b) O    c) P    e) E</p>	<p>Give the three trigonometric ratios.</p>
<p>a) 2 b) 2 (or infinite in a uniform circle) c) 0 d) 1</p>	<p>Sine: <math>\sin = \frac{\text{opposite}}{\text{hypotenuse}}</math>  Cosine: <math>\cos = \frac{\text{adjacent}}{\text{hypotenuse}}</math>  Tangent: <math>\tan = \frac{\text{opposite}}{\text{adjacent}}</math></p>
<p>How would you find the third side of a right angled triangle if given the two other sides?</p>	<p>What is the length of the diagonal of a rectangle with sides 8cm and 15cm?</p>
<p>Pythagoras' theorem  (Trigonometry is only used with angles.)</p>	<p>Using Pythagoras' theorem:  <math display="block">h^2 = 8^2 + 15^2</math><math display="block">h = \sqrt{289}</math><math display="block">= 17\text{cm}</math></p>