

Starter

1. Solve

a. $3(2x - 1) + 7 = 5x + 9$

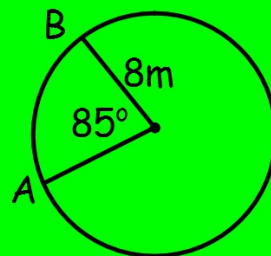
b. $7(2 - x) > 42$

2. Find the equation of the line which passes through

a. $(0, 5)$ and $(5, -10)$

b. $(8, 6)$ and $(0, 6)$

3. Calculate the length of minor arc AB

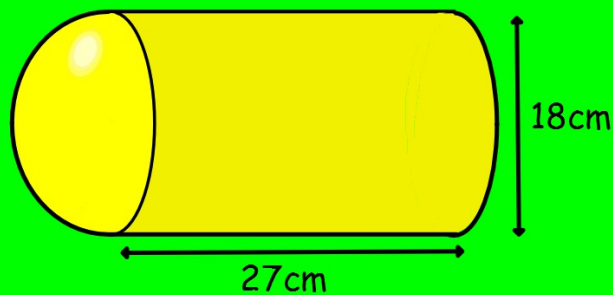


4. A pond has 8,200 tadpoles.

If the number of tadpoles increases by 15.1% every hour,
how long will it be till the pond has more than 15,000 tadpoles?

Starter

1. If Darren puts £350,000 in a bank account with an interest rate of 1.3% per annum, calculate the compound interest earned after 16 years.
2. Fully factorise
 - a. $48x^2y^3 + 8xy$
 - b. $14a^2bc - 42ab^2c^2$
3. Find the volume of the composite shape below, made from a hemisphere attached to a cylinder.



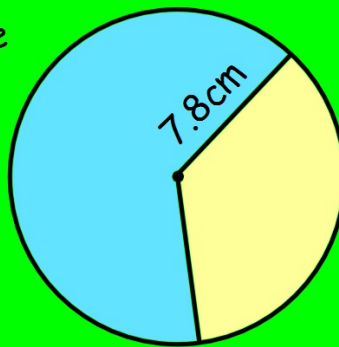
Starter

1. Calculate the area of a sector with angle 136° and radius of 9.14m.
2. Find the radius of a cone with height 12cm and volume $2,564\text{cm}^3$.
3. A straight line has equation $3y + 7 = x$.
 - a. Find the gradient and the y-intercept.
 - b. Find the equation of the parallel line which passes through (0, -9).
4. The first angle in a triangle is given by x° , the second is 10° less than the first, and the third is twice as big as the first.
Create an equation and find the sizes of all three angles.

Starter

1. If Sarah buys a jumper in a 25% off sale and it costs her £29.99, how much was it originally? Give your answer to the nearest 10p.

2. The area of the major sector in the circle shown is 130.08cm^2 . Find the angle at the centre of the **minor sector**.



3. Mr Smith has kept a record of his waiting times for the morning bus:

5, 8, 6, 5, 10, 6, 9, 3, 5, 12, 20, 6, 8, 13

- Find the five-figure summary of this data set.
- Draw a box plot to illustrate the data.

Starter

1. Which shape has the larger volume, a cylinder with radius 4cm and height 42cm or a sphere with radius 10.2cm?
2. Find the coordinates of the point where each line below crosses the y-axis.
 - a. $4y + 2x = 8$
 - b. $x - 9 = 5y$
 - c. $6 - 5y - x = 3$
3. Solve
 - a. $5(x + 3) > 2(2x + 5)$
 - b. $7 - \frac{1}{10}x < 2$
4. Find the distance between these sets of points:
 - a. (2, 6) and (7, -4)
 - b. (6, -1) and (4, 11)