

Starter

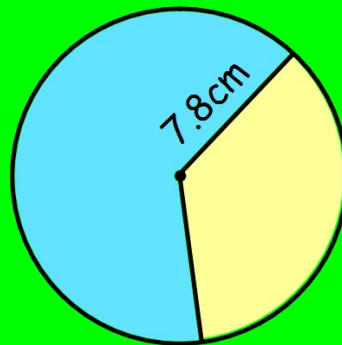
1. Multiply out the brackets and simplify.
 - a. $4(3m - 4) + 2(5m - 6)$
 - b. $3n(2 - n) - 5(n^2 - 15n)$
2. Find the equation of the line joining
 - a. $(0, -5)$ and $(2, 1)$
 - b. $(-7, -3)$ and $(0, -2)$
3. It is calculated that the population in Mexico city increases at a rate of 7.6% every 3 years.
If the population at the start of 2011 was 8.8 million, what was the population at the start of 2020?
4. Find the radius of a circle which has an area = 280 cm^2 (2 s.f.).

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1. Find the 5-figure summary for this data set:

37, 48, 73, 65, 34, 61, 59, 31, 55, 71, 59, 49

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



3. Solve the following

a. $4(x - 3) = 2(3x + 1)$

b. $8 - 2(x + 1) + 3(x - 4) = 0$

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1. Calculate

a. $\frac{2}{3} - \frac{1}{8}$

b. $\frac{7}{5} \times \frac{20}{21}$

c. $\frac{4}{5} \div \frac{8}{15}$

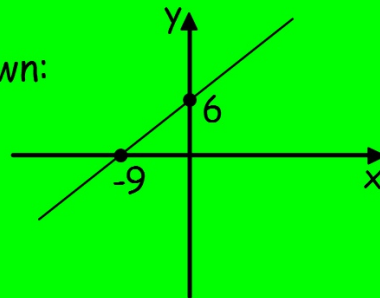
2. Solve

a. $4(2w - 7) = 3(w - 9)$

b. $4(t - 3) = 5(7 - 3t)$

3. The value of a house increased by 13% per year for 5 years.
It was originally valued at £176,214.
What is its new value?

4. Find the equation of the line shown:



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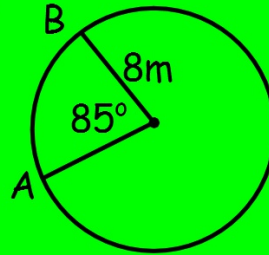
1. Find both the gradient and the coordinates of the y-intercept for each straight line below.

a. $2y = 8x - 12$

b. $6y + 3x - 7 = 0$

c. $5 - 3y = x$

2. Calculate the length of minor arc AB



3. Fully factorise

a. $12p^3 - 8p^2$

b. $12x^2yz^3 + 21x^3y^2z^4 - 33x^4yz^2$

4. If 3 girl guides take 8 hours to prepare 124 cupcakes for a fete, how long would 4 girls take?

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1. Calculate

a. $2^2 - 3 \times (8 - (-3))$

b. $3^2 \times (-5) - (-3) \times (-1)^2$

2. Calculate

a. $\frac{1}{5} + \frac{2}{3}$

b. $1\frac{3}{4} - \frac{4}{5}$

c. $4\frac{1}{5} \times 2\frac{1}{7}$

3. Find the equation of the line joining the points

a. (0, 9) and (2, 13)

b. (-3, 4) and (0, -6)

4. Calculate the area of a sector with angle 136° and radius of 9.14m.