Maths

Draw and Recognise Circle Graphs
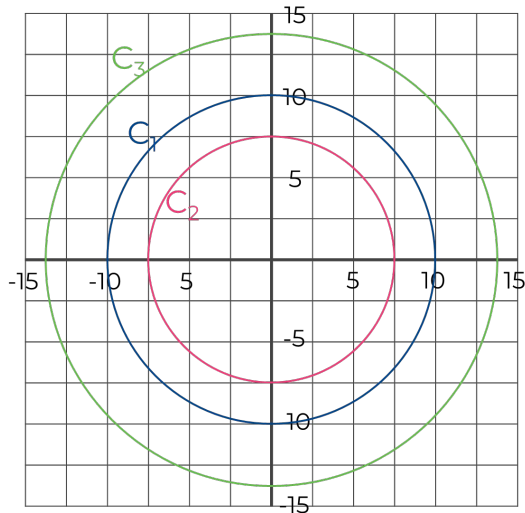
Miss Davies

Please note some slides do have colour font on them

Equation of a circle

1. Write down the equation of C_1, C_2, and C_3

2. a) Write down the equation of the circle with centre (0, 0) and radius 4.

b) Write down the equation of the circle with centre (0, 0) and diameter 14

c) Write down the equation of the circle with centre (0, 0) and area 100π

Equation of a circle

3. A circle with centre (0, 0) has a circumference of 144π cm.

Find the equation of the circle.

4. The equation of a circle is

$$x^2 = 42.24 - y^2$$

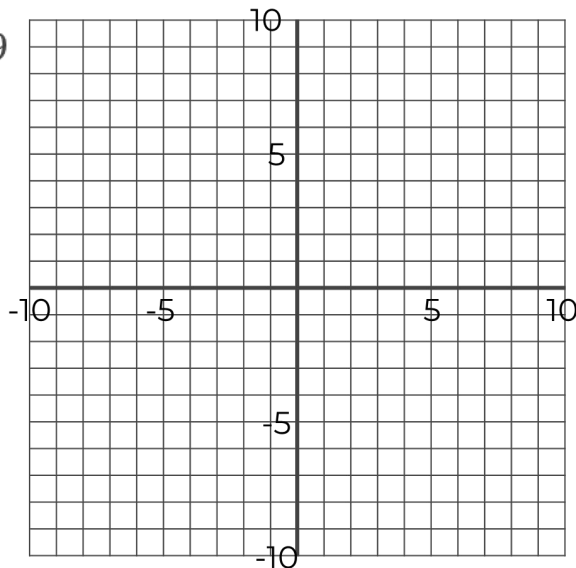Work out the circumference of the circle.

Equation of a circle

5. e.g. Sketch each graph

a) $x^2 + y^2 = 49$

Label C_1

b) $x^2 + y^2 = \dfrac{25}{4}$

Label C_2

6. The equation of circle C_1 is given as $x^2 + y^2 = b^2$ where b is the radius of the circle.

C_2 is a concentric circle to C_1 that has an area $\dfrac{2}{3}$ the size of C_1.
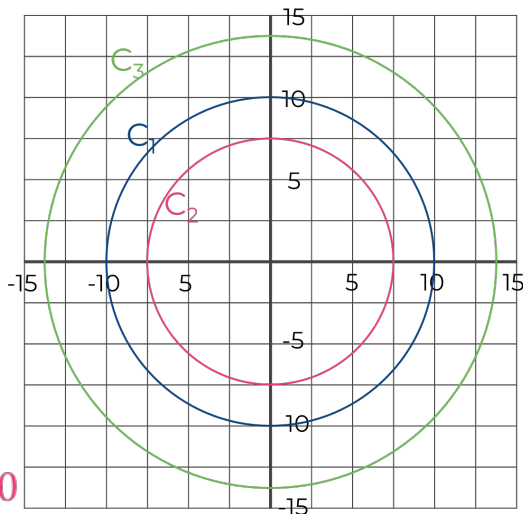
Write the equation of C_2 in terms of x, y and b.

Answers

Equation of a circle

1. Write down the equation of C_1, C_2, and C_3

C_1: $x^2 + y^2 = 100$

C_2: $x^2 + y^2 = 56.25$

C_3: $x^2 + y^2 = 189.0625$

2. a) Write down the equation of the circle with centre (0, 0) and radius 4.
$$x^2 + y^2 = 16$$

b) Write down the equation of the circle with centre (0, 0) and diameter 14
$$x^2 + y^2 = 49$$

c) Write down the equation of the circle with centre (0, 0) and area 100π
$$x^2 + y^2 = 100$$

Equation of a circle

3. A circle with centre (0, 0) has a circumference of 12π cm.

Find the equation of the circle.

$$x^2 + y^2 = 36$$

4. The equation of a circle is

$$x^2 = 42.24 - y^2$$

Work out the circumference of the circle. Give your answer in exact form.
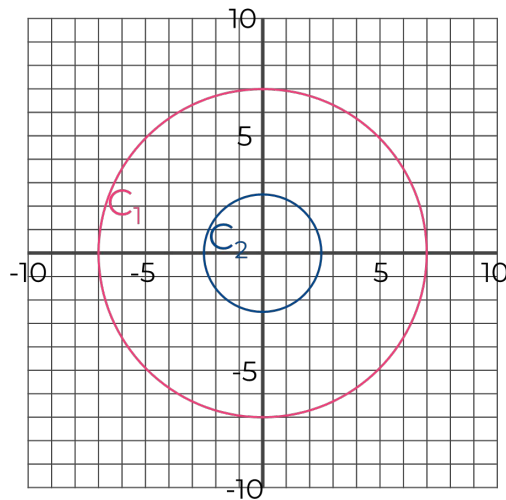
$$13\pi$$

Equation of a circle

5. e.g. Sketch each graph

a) $x^2 + y^2 = 49$

Label C_1

b) $x^2 + y^2 = \dfrac{25}{4}$

Label C_2

6. The equation of circle C_1 is given as $x^2 + y^2 = b^2$ where b is the radius of the circle.

C_2 is a concentric circle to C_1 that has an area $\dfrac{2}{3}$ the size of C_1.

Write the equation of C_2 in terms of x, y and b.

$x^2 + y^2 = \dfrac{2a^2}{3}$