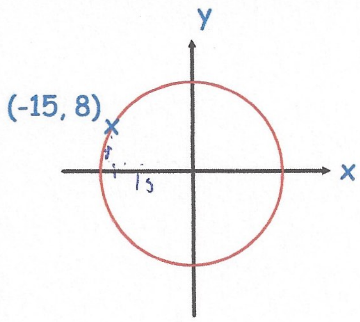
16th March

Corbettmaths



$8^2 + 15^2$

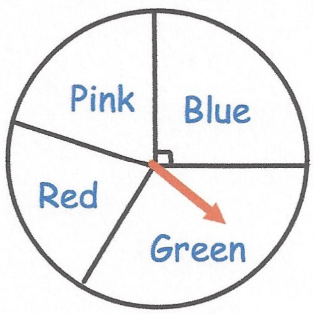
$r = \sqrt{289}$

$r = 17$

Find the equation of the circle.

$x^2 + y^2 = 17^2$

or $x^2 + y^2 = 289$



Work out the angle of the green sector

$\frac{2}{5}$ of $360 = \underline{144°}$

The fair spinner above is spun twice.

The probability of getting two greens is $\frac{4}{25}$

$y \times y = \frac{4}{25}$

$y = \frac{2}{5}$

The spinner is spun another three times.
Work out the probability of obtaining one green and two blues.

$P(GBB) = \frac{2}{5} \times \frac{1}{4} \times \frac{1}{4} = \frac{1}{40}$

$P(BGB) = \frac{1}{40}$

$P(BBG) = \frac{1}{40}$

$\frac{3}{40}$

A sequence of numbers is formed by the iterative process of

$$a_{n+1} = (a_n)^3 - (a_n)^2$$
$$a_1 = 2$$

Find

a_3

$a_2 = 2^3 - 2^2$

$= 8 - 4$

$= 4$

$a_3 = 4^3 - 4^2 = 48$

Show
$$\frac{1}{1 + \frac{1}{\sqrt{3}}}$$
can be written as
$$\frac{1}{2}(3 - \sqrt{3})$$

$\frac{1}{\frac{\sqrt{3}}{\sqrt{3}} + \frac{1}{\sqrt{3}}}$

$\frac{1}{\frac{3}{3} + \frac{\sqrt{3}}{3}} = \frac{1}{\frac{\sqrt{3}+3}{3}}$

$1 \times \frac{3}{\sqrt{3}+3} = \frac{3}{\sqrt{3}+3} \times \frac{(\sqrt{3}-3)}{(\sqrt{3}-3)}$

$\frac{3(\sqrt{3}-3)}{3 - \cancel{3\sqrt{3}} + \cancel{3\sqrt{3}} - 9} = \frac{3(\sqrt{3}-3)}{-6}$

$= \frac{1}{2}(3 - \sqrt{3})$