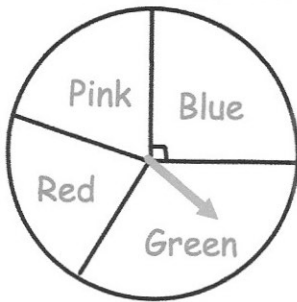


Find the equation of the circle.

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



Work out the angle of the green sector

$$P(\text{green}) = \frac{2}{5}$$

$$\frac{2}{5} \text{ of } 360 = 144^\circ$$

The 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.

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

$$P(\text{BGBB}) = \frac{1}{40}$$

$$P(\text{BBGB}) = \frac{1}{40}$$

$$\frac{3}{40}$$

A sequence of numbers is formed by the iterative process of

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

$$a_1 = 2$$

Find

$$a_3$$

$$a_2 = 2^3 - 2^2$$

$$= 8 - 4$$

$$= 4$$

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

Write

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

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

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

in the form $a + b\sqrt{3}$

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

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

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