



2nd June

Given

$$f(x) = \frac{2x + 4}{3}$$

find

$$f^{-1}(x) = \frac{3x - 4}{2}$$

$$y = \frac{2x + 4}{3}$$

$$3y = 2x + 4$$

$$x = \frac{3y - 4}{2}$$

Rebecca has 9 cards, each with a number on it.



She picks two cards at random, without replacement.

Rebecca multiplies the two numbers to get a score.

Calculate the probability that the score is an even number

$$P(\text{odd}) = \frac{4}{9}$$

$$P(\text{odd, odd}) = \frac{4}{9} \times \frac{3}{8} = \frac{12}{72}$$

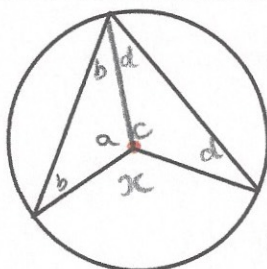
$$\therefore P(\text{even score})$$

$$= 1 - \frac{12}{72} = \frac{60}{72}$$

Write in the form $a(x + b)^2 + c$

$$3x^2 - 12x + 41$$

$$3(x - 2)^2 + 29$$



$$b = \frac{180 - a}{2}$$

$$= 90 - \frac{1}{2}a$$

$$d = 90 - \frac{1}{2}c$$

$$b + d = 180 - \frac{1}{2}a - \frac{1}{2}c$$

Prove that the angle at the centre is twice the angle at the circumference.

$$x = 360 - a - c$$

which is twice $b + d$