



4th March

Expand and simplify

$(3 + \sqrt{2})(\sqrt{10} + \sqrt{3})$

$$3\sqrt{10} + 3\sqrt{3} + \sqrt{20} + \sqrt{6}$$

$$3\sqrt{10} + 3\sqrt{3} + 2\sqrt{5} + \sqrt{6}$$

SE
40



Calculate the probability that the score is an even number

Rebecca has 9 cards, each with a number on it. She picks three cards at random, without replacement. Rebecca adds the three numbers to get a score.

$$P(E+E+E) = \frac{5}{9} \times \frac{4}{8} \times \frac{3}{7} = \frac{5}{42}$$

$$P(O+O+E) = \frac{4}{9} \times \frac{3}{8} \times \frac{5}{7} = \frac{5}{42}$$

$$P(E+O+O) = \frac{5}{9} \times \frac{4}{8} \times \frac{3}{7} = \frac{5}{42}$$

$$P(O+E+O) = \frac{4}{9} \times \frac{5}{8} \times \frac{3}{7} = \frac{5}{42}$$

} $\frac{10}{21}$

Given

$$f(x) = \frac{x+1}{3}$$

$$g(x) = 8x+9$$

$$y = \frac{x+1}{3}$$

$$3y = x+1$$

$$3y-1 = x$$

$$f^{-1}(x) = 3x-1$$

Solve

$$f^{-1}(x) = g(x)$$

$$3x-1 = 8x+9$$

$$-10 = 5x$$

$$x = -2$$

Find an expression, in terms of n, for the nth term of the quadratic sequence

5	16	31	50
11	15	19	
4	4		

$$6+b = 11$$

$$b = 5$$

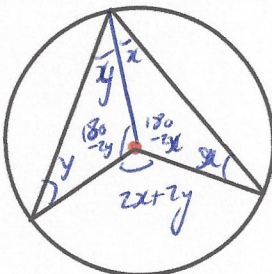
$$2+5+c = 5$$

$$a = 2$$

$$b = 5$$

$$c = -2$$

$$2n^2 + 5n - 2$$



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

Angle at circumference: $x+y$
 Angle at centre: $2x+2y$

QED