Name: _____ 5-a-day Further Maths

13th March

Corbettmaths

Make c the subject of

$$\frac{3}{abc} = 8 - \frac{7}{ab}$$

$3 = 8abc - 7c$

$3 = c(8ab - 7)$

$c = \frac{3}{8ab - 7}$

$y = x^3 + 2x$

Work out the values of x at which the rate of change of y with respect to x is 50.

$\frac{dy}{dx} = 3x^2 + 2$

$3x^2 + 2 = 50$

$3x^2 = 48$

$x^2 = 16$

$x = 4$ or $x = -4$

Solve $16^x = 4^{10-x}$

$(4^2)^x = 4^{10-x}$

$4^{2x} = 4^{10-x}$

$2x = 10 - x$

$3x = 10$

$x = \frac{10}{3}$

The nth term of a sequence is

$n^2 - 6n + 7$

The difference between two consecutive terms is 25.

Work out the two terms

$(n+1)^2 - 6(n+1) + 7 - (n^2 - 6n + 7)$

$n^2 + 2n + 1 - 6n - 6 + 7 - n^2 + 6n - 7$

$2n - 5 = 25$

$n = 15$

15th term (142) & 16th term (167)

$4\sin^2 x - 6\cos^2 x \equiv A + \sin^2 x$

Work out the values of A and B.

$4\sin^2 x - 6(1 - \sin^2 x)$

$4\sin^2 x - 6 + 6\sin^2 x$

$10\sin^2 x - 6$

$A = -6$

$B = 10$