

**23rd October**

Corbettmaths

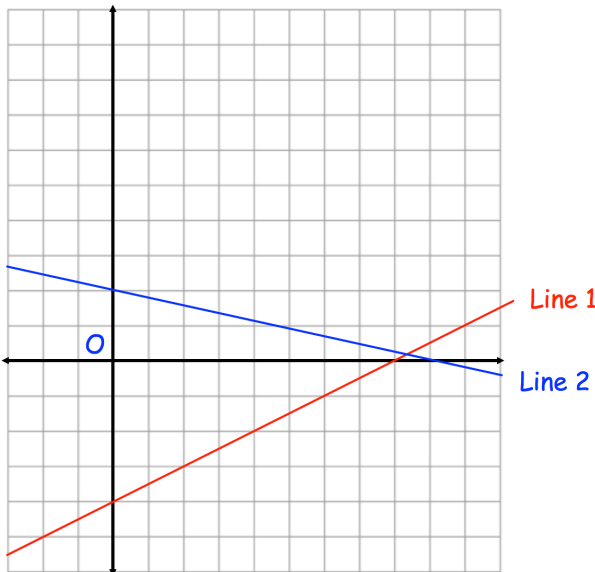
$$f(x) = 4x^3 + 5x^2 - 23x - 6$$

Use the factor theorem to show that  $(4x + 1)$  is a factor of  $f(x)$

Circle 1 has an equation of  $(x + 12)^2 + (y - 4)^2 = 64$

Circle 2 has an equation of  $(x - 4)^2 + (y + 2)^2 = 9$

Calculate the distance between the centres of Circle 1 and Circle 2



Line 1 has equation

$$y = \frac{3}{2}x - 24$$

Are Line 1 and Line 2 perpendicular?

Work out the rate of change of  $y$  with respect to  $x$  at the point on the curve

$$y = (2x + 1)(x^2 + 1) \text{ where } x = -1$$