

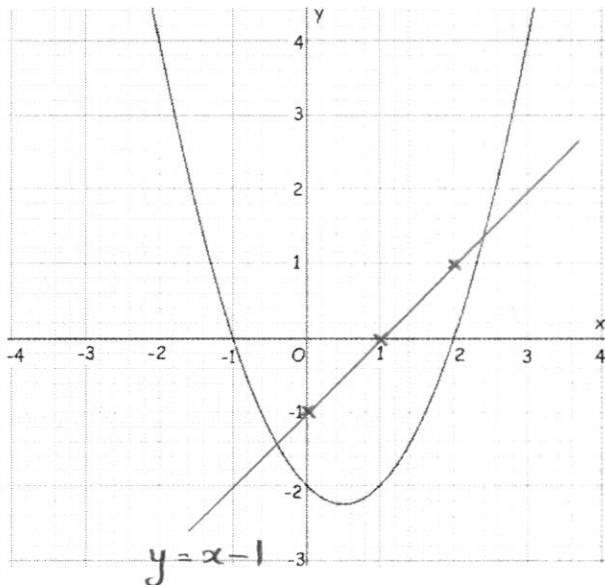
19th May



Corbettmaths

Factorise fully  $15xy^3z + 20x^2y^4z$ 

$$= 5xy^3z(3 + 4xy)$$

Shown is  $y = x^2 - x - 2$ 

By drawing an appropriate straight line,  
use your graph to find estimates for  
the solutions of  $x^2 - 2x - 1 = 0$

$$\Rightarrow x^2 - x - 2 = x - 1$$

so draw  $y = x - 1$

$$\underline{x = -0.4, 2.4}$$

Calculate the gradient of the graph  
 $y = x^2 - x - 2$  at the point where  $x = 1$

$$\frac{dy}{dx} = 2x - 1$$

$$x = 1 \Rightarrow \underline{\frac{dy}{dx} = 1}$$

Solve the simultaneous equations

$$6x + 8y - 2z = 750 \quad (1)$$

$$18x - 2y + 4z = 1100 \quad (2)$$

$$4x - 4y + 2z = 100 \quad (3)$$

$$(1) + (3): 10x + 4y = 850$$

$$(1) \times 2 + (2): 30x + 14y = 2600$$

$$\underline{30x + 12y = 2550}$$

$$2y = 50$$

$$\Rightarrow \underline{y = 25}$$

$$\underline{x = 75}$$

$$300 - 100 + 2z = 100$$

$$\Rightarrow \underline{z = -50}$$