

**24th October**

Corbettmaths

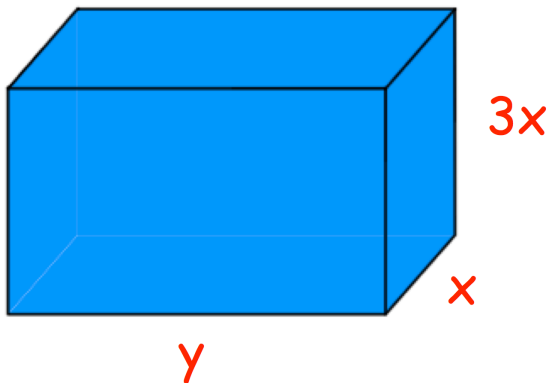
A line passes through the points  
 $(4a, -a)$  and  $(6a, 9a)$

Work out the gradient of the line

Use the factor theorem to show that  
 $(x - 2)$  is a factor of  
 $x^3 - 9x^2 + 20x - 12$

Hence, factorise fully

$$x^3 - 9x^2 + 20x - 12$$



Show that the volume of the cuboid is

$$V = 90x - \frac{9}{4}x^3$$

The surface area of the cuboid is  $240\text{cm}^2$

Use differentiation to find the value of  $x$   
 for which  $V$  is a maximum