

**3rd September**

Corbettmaths

The  $n^{\text{th}}$  term of a quadratic sequence is  
 $n^2 - 5n + 3 = t_n$

Work out the difference between the  
 10th and 15th terms.

$$t_{10} = 53$$

$$t_{15} = 153$$

$$t_{15} - t_{10} = \underline{100}$$

$$-20 < a < -5 \quad \text{and} \quad -8 < b < -2$$

Write down an inequality for each of the  
 following

$$ab$$

$$\underline{10 < ab < 160}$$

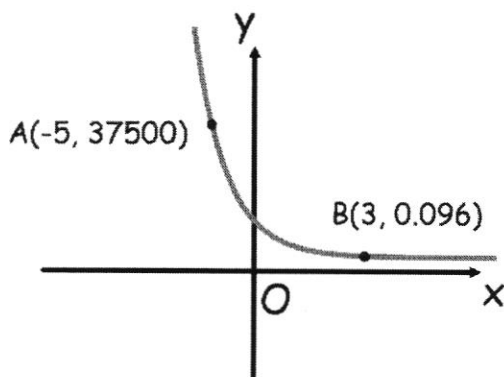
$$b^3$$

$$\underline{8 < b^3 < 512}$$

$$\frac{a}{b}$$

$$\underline{\frac{5}{8} < \frac{a}{b} < 10}$$

The sketch shows a curve with equation  
 $y = ab^x$  where  $a > 0$  and  $b > 0$



The curve passes through the points  
 $(-5, 37500)$  and  $(3, 0.096)$   
 Calculate the value of  $a$  and  $b$

$$y = ab^x$$

$$37500 = ab^{-5}$$

$$0.096 = ab^3$$

Dividing,

$$2.56 \times 10^{-6} = b^8$$

$$\Rightarrow \underline{0.2 = b}$$

$$0.096 = a \times 0.2^3$$

$$\Rightarrow \underline{12 = a}$$