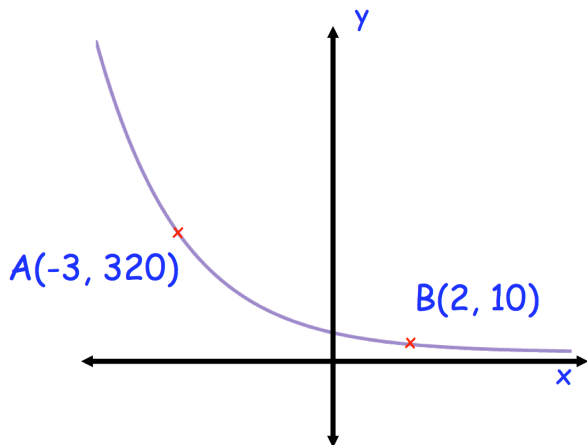**5th October**

Corbettmαths

Expand and simplify

$$\frac{3}{x^4}\left(12x^6 + \frac{x^4}{9} + 3x\right)$$

Calculate a and b.

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

Work out the values of x for which

$$f(x) = \frac{1}{3}x^3 + \frac{11}{2}x^2$$

is a decreasing function

Use calculus to find the coordinates of the minimum point of the graph of

$$y = 4x^2 - 9x + 11$$