
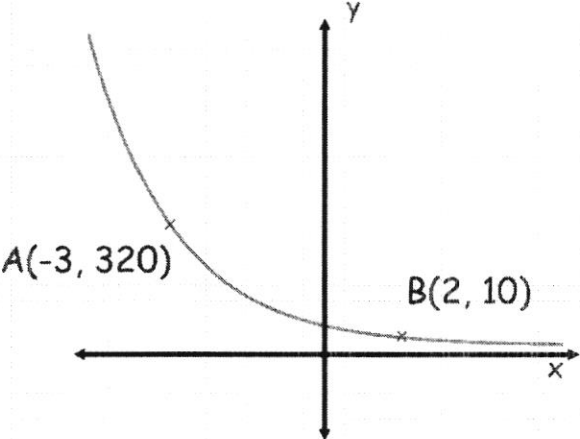


5th October	
<p>Expand and simplify</p> $\frac{3}{x^4}(12x^6 + \frac{x^4}{9} + 3x)$	<div style="text-align: right;">  Corbettmaths </div> $= \underline{36x^2 + \frac{1}{3} + \frac{9}{x^3}}$
 <p>The sketch shows a curve with equation $y = ab^{-x}$ where $a > 0$ and $b > 0$</p>	<p>Calculate a and b.</p> $y = ab^{-x}$ $320 = ab^3$ $10 = ab^{-2}$ <hr style="width: 50%; margin-left: 0;"/> $32 = b^5 \Rightarrow \underline{b = 2}$ $\underline{a = 40}$
<p>Work out the values of x for which</p> $f(x) = \frac{1}{3}x^3 + \frac{11}{2}x^2$ <p>is a decreasing function</p>	$f'(x) = x^2 + 11x$ <p>Decr $\Rightarrow x^2 + 11x < 0$</p> $x(x+11) < 0$ $\underline{-11 < x < 0}$
<p>Use calculus to find the coordinates of the minimum point of the graph of</p> $y = 4x^2 - 9x + 11$	$\frac{dy}{dx} = 8x - 9$ <p>At min $8x - 9 = 0$</p> $\Rightarrow x = \frac{9}{8}$ $\underline{\left(\frac{9}{8}, \frac{95}{16}\right)}$