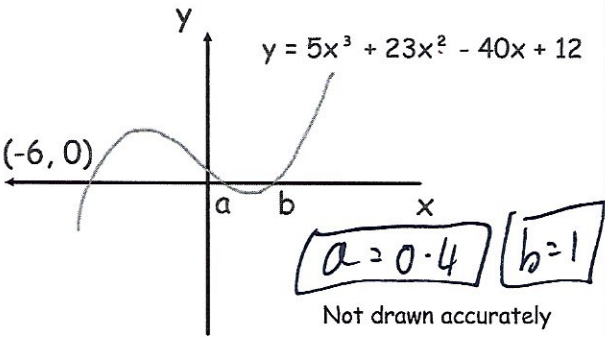


<p>3rd April</p>	
<p>The n^{th} term of a quadratic sequence is $n^2 - 4n + 9$</p> <p>Work out the difference between the 10th and 15th terms.</p> $10^2 - 40 + 9 = 69$ $15^2 - 60 + 9 = 174$	<p style="text-align: right;">Corbettm@ths</p> $174 - 69 = \underline{\underline{105}}$
<p>$y = \frac{2x^6 - x^5}{x^3}$ $y = 2x^3 - x^2$</p> <p>Work out the rate of change of y with respect to x when $x = 3$</p>	$\frac{dy}{dx} = 6x^2 - 2x$ <p>when $x = 3$</p> $\frac{dy}{dx} = 54 - 6 = 48$
<p>Below is the graph of $y = 5x^3 + 23x^2 - 40x + 12$</p>  <p>Find the coordinates of the points a and b, where the graph of $y = 5x^3 + 23x^2 - 40x + 12$ crosses the x-axis.</p>	$(x+b)(5x^2 + ax + c) = 5x^3 + 23x^2 - 40x + 12$ $(x+b)(5x^2 + ax + 2)$ $50x^2 + ax^2 = 23x^2$ $a = -7$ $(x+b)(5x^2 - 7x + 2)$ $(x+b)(5x - 2)(x - 1)$ $(0.4, 0) \quad (1, 0)$
<p>The coefficient of the x^2 term in the expansion of $(2x + a)^5$ is 13720</p> <p>Find the possible values of a</p> $ \begin{array}{cccccc} & & & & & & \\ & & & & & & 1 \\ & & & & & 1 & \\ & & & & 1 & 2 & 1 \\ & & & 1 & 3 & 3 & 1 \\ & & 1 & 4 & 6 & 4 & 1 \\ 1 & 5 & 10 & 10 & 5 & 1 & \\ & & & & & & \end{array} $	$10 \times (2x)^2 \times a^3 = 13720x^2$ $10 \times 4x^2 \times a^3 = 13720x^2$ $40a^3x^2 = 13720x^2$ $a^3 = 343$ $a = 7$