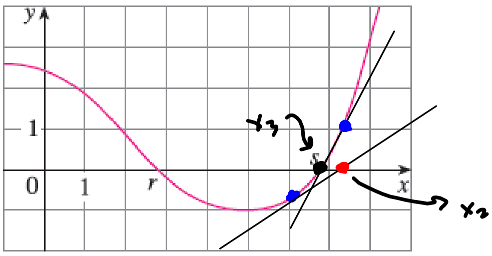
The figure shows the graph of a function *f*. Suppose that Newton's method is used to approximate the root *s* of the equation $f(x) = 0$ with initial approximation $x_1 = 6$.



(a) Draw the tangent lines that are used to find x_2 and x_3, and estimate the numerical values of x_2 and x_3. (Round your answers to one decimal place.)

x_2 = [ ]

x_3 = [ ]

(b) Would $x_1 = 8$ be a better first approximation? Explain.

$x_1 = 8$ [---Select---] be a better first approximation because the tangent line at $x = 8$ intersects the x-axis [---Select---] *s* than does the first approximation $x_1 = 6$.

$f(x) = 2x^3 - 3x^2 + 2 \qquad x_1 = -1 \qquad \text{want } x_3$

$f(-1) = 2(-1) - 3 + 2 = -5 + 2 = -3 = f(x_1)$

$f'(x) = 6x^2 - 6x$

$f'(-1) = 6 + 6 = 12 = f'(x_1)$

$$x_2 = x_1 - \frac{f(x_1)}{f'(x_1)} = -1 - \frac{-3}{12} = -\frac{4}{4} + \frac{1}{4} = -\frac{3}{4}$$

$$x_3 = -\frac{3}{4} - \frac{f(3/4)}{f'(-\frac{3}{4})}$$

Joseph found my error on the Desmos. I'm still not getting the right answer on Excel!!!

$f'(x) = x^2 - 4x^3 + 7x^6 + 9$

Find $f(x)$ if $f(1) = 7$

$$\boxed{f(x) = \frac{1}{3}x^3 - x^4 + x^7 + 9x + C}$$

$f(1) = 7 \Rightarrow$

$\frac{1}{3} - 1 + 1 + 9 + c = 7$

$\frac{28}{3} + c = 7$

$28 + 3c = 21$

$3c = -7$

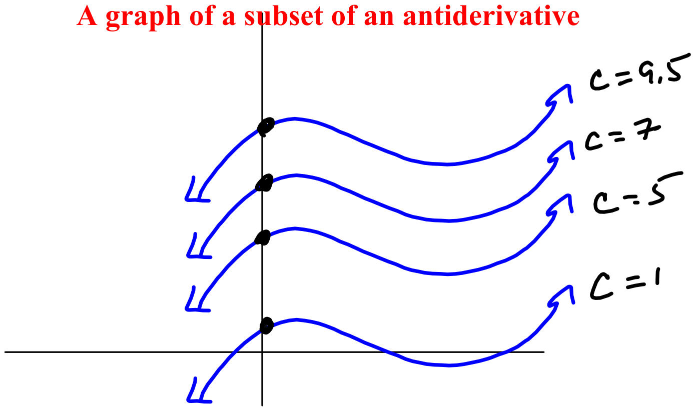
$$\boxed{c = -\frac{7}{3}}$$

Suppose $f(0) = 7$

$\Rightarrow C = 0$, b/c

$f(0) = C = 7$

A graph of a subset of an antiderivative



$f'(t) = \sec(t)\left(\sec(t) + \tan(x)\right) \qquad f\left(\frac{\pi}{4}\right) = -6$

$= \sec^2 t + \sec(t)\tan(t)$

$\Rightarrow \boxed{f(t) = \tan(t) + \sec(t) + C}$

$f\left(\frac{\pi}{4}\right) = 1 + \sqrt{2} + C = -6 \Rightarrow$

$C = -6 - 1 - \sqrt{2} = \boxed{-7 - \sqrt{2} = C}$