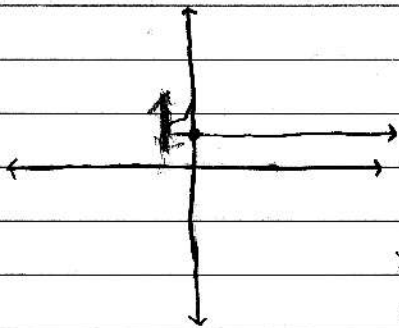


pg. 296 # 20

Julia Francy

$$x = t^4 - t^2$$

$$y = t - \ln t \Rightarrow t = 0.70$$



$$t = .654$$

$$x = -2.45 \quad y = 1.08$$

$$(-2.45, 1.08)$$

$$x = t^4 - t^2 \quad x' = 4t^3 - 2t$$

$$y = t - \ln t \quad y' = 1 - \frac{1}{t}$$

Vertical  
tangent  
line

$$\frac{dy}{dx} \stackrel{\text{chain rule}}{=} \frac{dy/dt}{dx/dt} = \frac{1 - \frac{1}{t}}{4t^3 - 2t}$$

$$4t^3 - 2t = 0$$

$$t(4t^2 - 2) = 0$$

$$t = 0 \quad 4t^2 = 2$$

$$t^2 = \frac{1}{2}$$

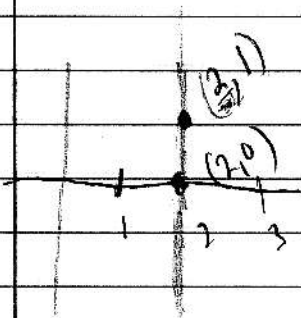
$$t = \sqrt{\frac{1}{2}}$$

$$x = t^4 - t^2 = \left(\sqrt{\frac{1}{2}}\right)^2 - \left(\sqrt{\frac{1}{2}}\right)^2$$

$$\left(\frac{1}{2}\right)^2 - \frac{1}{2} = \frac{1}{4} - \frac{1}{2} = -\frac{1}{4}$$

$$y = t - \ln t = \sqrt{\frac{1}{2}} - \ln\left(\sqrt{\frac{1}{2}}\right)$$

$$= 1.05$$



$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{1 - 0}{2 - 2} = \frac{1}{0} ?$$

$$\log_3 x = 2 \Rightarrow 3^2 = x$$

$$3^2 = x$$

