

Quiz 1 - 6/20/23

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$$x = \sqrt{t} = t^{1/2}$$

$$y = t^2 - 2t$$

$$\frac{dy}{dx} = \frac{dy/dt}{dx/dt} = \frac{2t-2}{\frac{1}{2}t^{-1/2}}$$

$$x(4) = \sqrt{4} = 2 \quad t=4 \quad \Rightarrow \quad \frac{dy}{dx} = \frac{8-2}{\frac{1}{2} \frac{1}{\sqrt{4}}} = \boxed{24} \text{ slope of line}$$

$$y(4) = 16 - 8 = 8$$

$$y - y_1 = m(x - x_1)$$

$$y - 8 = 24(x - 2)$$

$$y = 24x - 48 + 8$$

$$\boxed{y = 24x - 40}$$