

$$7. (xy)^{\frac{1}{2}} = 7x - y + 5 \quad (1, 9)$$

$$\frac{d}{dx} [(xy)^{\frac{1}{2}}] = \frac{d}{dx} (7x) - \frac{d}{dx} (y) + \frac{d}{dx} (5)$$

$$\frac{1}{2} (xy)^{\frac{1}{2}-1} \cdot \frac{d}{dx} (xy) = 7 - 1 \cdot y' + 0$$

$$P' = 1 \quad Q' = 1 \cdot y'$$

$$P'Q + P Q'$$

$$\frac{1}{2} (xy)^{-\frac{1}{2}} \cdot [1 \cdot y + x \cdot y'] = 7 - y'$$

$$\frac{1}{2(xy)^{1/2}} [y + x y'] = 7 - y'$$

$$\frac{y + x y'}{2(xy)^{1/2}} = 7 - y'$$

$$2(xy)^{1/2} \left( \frac{y + x y'}{2(xy)^{1/2}} \right) = 2(xy)^{1/2} \cdot 7 + 2(xy)^{1/2} (-y')$$

$$y + x y' = 14(xy)^{1/2} - 2(xy)^{1/2} y'$$

$$x y' + 2(xy)^{1/2} y' = 14(xy)^{1/2} - y$$

$$y' (x + 2(xy)^{1/2}) = 14(xy)^{1/2} - y$$

$$\frac{y' (x + 2(xy)^{1/2})}{x + 2(xy)^{1/2}} = \frac{14(xy)^{1/2} - y}{x + 2(xy)^{1/2}}$$

$$y' = \frac{14(xy)^{1/2} - y}{x + 2(xy)^{1/2}}$$

RECALL  $(xy)^{1/2} = 7x - y + 5$

$$y' = \frac{14(7x - y + 5) - y}{x + 2(7x - y + 5)}$$

$$y' = \frac{14(7x - y + 5) - y}{x + 2(7x - y + 5)}$$

$$y' = \frac{98x - 14y + 70 - y}{x + 14x - 2y + 10}$$

$$y' = \frac{98x - 15y + 70}{15x - 2y + 10}$$

$$\textcircled{2} m = \frac{98(1) - 15(9) + 70}{15(1) - 2(9) + 10}$$

$$= \frac{98 - 135 + 70}{15 - 18 + 10}$$

$$m = \frac{33}{7}$$

$(1, 9)$   
x y

$\frac{70}{-37}$   
33