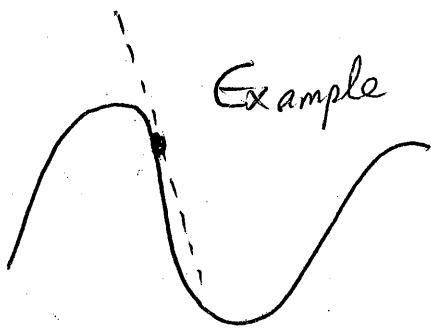


65)



share same y-value

* set their equations equal to each other

share same slope

* set their derivatives equal

$$f(x) = \frac{k}{x} \quad y = \frac{-3}{4}x + 3$$

$$\boxed{\frac{k}{x} = \frac{-3}{4}x + 3}$$

$$\frac{\frac{3}{4}x^2 \cdot \frac{1}{x}}{x \cdot \frac{1}{x}} = \frac{-3}{4}x + 3$$

$$\frac{3x^{\cancel{2}}}{4x} = \frac{-3}{4}x + 3$$

$$\frac{3}{4}x = \frac{-3}{4}x + 3$$

$$\frac{3}{4}x + \frac{3}{4}x = 3$$

$$\frac{6}{4}x = 3$$

$$\frac{2}{3} \cdot \frac{3}{2}x = 3 \cdot \frac{2}{3}$$

$$\boxed{x=2}$$

$$f(x) = kx^{-1} \quad y = \frac{-3}{4}x + 3$$

$$f'(x) = \underline{-kx^{-2}} \quad y' = \underline{\frac{-3}{4}}$$

$$x^2 \left[\frac{+k}{x^2} = \frac{+3}{4} \cdot x^2 \right]$$

$$k = \frac{3}{4}x^2$$

$$\rightarrow k = \frac{3}{4}(2)^2 = \frac{3}{4} \cdot 4 = 3$$

$$\boxed{k=3}$$