7.5 Extra Practice

I can find the constant of proportionality using an equation and I can represent proportional relationships by writing equations. Show **all** your work on this paper.

1) $y = 21; x = 3$

   a) Constant of Proportionality:
$$y = kx$$
$$21 = k \cdot 3$$
$$7 = k$$

   b) Equation:
$$y = 7x$$

2) $y = 36; x = 72$

   a) Constant of Proportionality:
$$y = kx$$
$$36 = k \cdot 72$$
$$\tfrac{1}{2} = k$$

   b) Equation:
$$y = \tfrac{1}{2}x$$

7.5 I can tell whether x and y show direct variation. Why??

3) $4x = y$ **YES** or NO *Why?*

$$y = 4x$$

4) $y + 2 = x$ YES or **NO** *Why?*

$$y = x - 2$$

5) $x = \tfrac{1}{5}y$ **YES** or NO *Why?*

$$y = 5x$$

6) $y = x$ **YES** or NO *Why?*

$$y = 1x$$

7) Suppose y varies directly as x.
If $y = 12$ when $x = 4$, find x when $y = 27$.

$$y = kx$$
$$12 = k(4)$$
$$3 = k$$

$$27 = 3x$$
$$\boxed{9 = x}$$

8) Suppose y varies directly as x.
If $y = 2$ when $x = 18$, find y when $x = 54$

$$y = kx$$
$$2 = k \cdot 18$$
$$\tfrac{1}{9} = k$$

$$y = \tfrac{1}{9}(54)$$
$$\boxed{y = 6}$$

9) Suppose y varies directly as x. If $x = 24$ when $y = 8$, find y when $x = 3$

$$y = kx$$
$$8 = k(24)$$
$$\tfrac{1}{3} = k$$

$$y = \tfrac{1}{3}(3)$$
$$\boxed{y = 1}$$