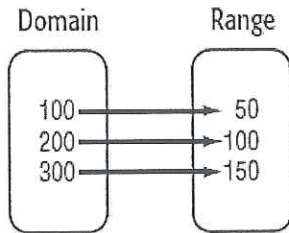


PRACTICE 2.1-2.4

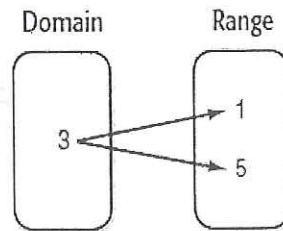
1. Identify whether each of the following relations is a function. If it is not a function, you must explain WHY

A.



yes

B.



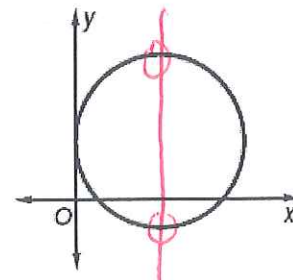
no; each x must only go to one y.

C.

x	y
1	2
2	4
3	6

yes

D.



fails VLT

2. Identify whether each of the following equations or functions are linear. If they are not linear, you must explain WHY

A. $2x + y = 10$

Linear? yes

If not, why? _____

B. $f(x) = 4x^2$

Linear? no

If not, why? x cannot have an exponent

C. $-\frac{3}{x} + y = 15$

Linear? no

If not, why? x cannot be in denom.

D. $g(x) = 8$

Linear? yes

If not, why? _____

3. Write the following equations in standard form then identify A, B, and C.

9. $y = x$
 $-x + y = 0$
 $x - y = 0$
 $A = 1$ $B = -1$
 $C = 0$

10. $y = 5x + 1$
 $5x - y = -1$
 $A = 5$ $B = -1$ $C = -1$

11. $2x = 4 - 7y$
 $2x + 7y = 4$
 $A = 2$ $B = 7$ $C = 4$

12. $3x = -2y - 2$
 $3x + 2y = -2$
 $A = 3$ $B = 2$ $C = -2$

13. $5y - 9 = 0$
 $5y = 9$
 $A = 0$ $B = 5$ $C = 9$

14. $-6y + 14 = 8x$
 $8x + 6y = 14$
 $A = 8$ $B = 6$ $C = 14$

4. Write an equation in slope-intercept form for the line that passes through (3, -1) and is perpendicular to the line $y = -3x - 4$.

$m = -3$
 $\perp m = 1/3$
 $y = mx + b$
 $-1 = 1/3(3) + b$
 $-1 = 1 + b$
 $-2 = b$

$y = 1/3x - 2$

5. A. Find the slope of the line that passes through (-2, -4), (3, 2)

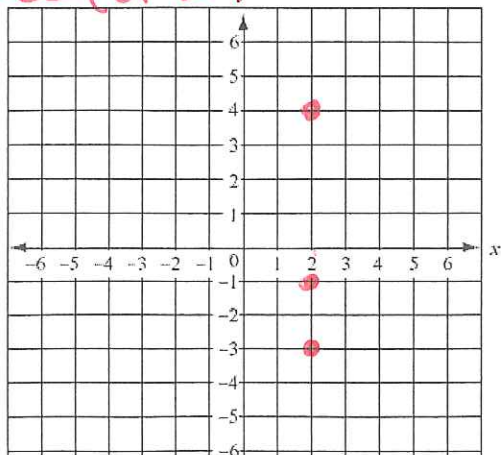
$\frac{2 - (-4)}{3 - (-2)} = \frac{6}{5}$
 $6/5$

B. Write an equation in point-slope form for the line in question 5A above.

$y + 4 = 6/5(x + 2)$ or $y - 2 = 6/5(x - 3)$

6. Identify if the graphs of the following lines are parallel, perpendicular, or neither.

Use for #7



3. $2x + y = 10$

4. $f(x) = 4x^2$

5. $-\frac{3}{x} + y = 15$

6. $\frac{1}{3}x = y +$

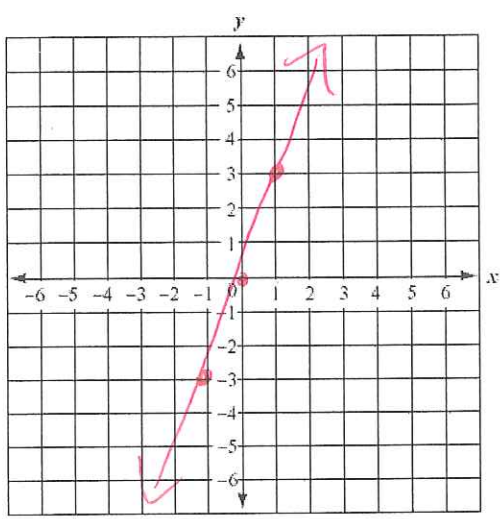
7. $g(x) = 8$

8. $h(x) = \sqrt{5}$

7. Use the relation $\{(2, \overset{-3}{\underline{3}}, (2, 4), (2, -1)\}$ to answer the following:

- A. Graph the relation.
- B. Identify the domain: $\{2\}$
- C. Identify the range: $\{-3, -1, 4\}$
- D. Is this relation a function? If not, explain why.

no; fails vlt; x goes to more than 1 y



8. Use the equation $y = 3x$ to answer the following:

- A. Graph the equation.
- B. Identify the domain: \mathbb{R}
- C. Identify the range: \mathbb{R}
- D. Is this relation a function? If not, explain why.

yes

Find each value if $f(x) = 2x - 1$ and $g(x) = 2 - x^2$.

8. 9. $f(0)$
 $\boxed{-1}$

10. $f(12)$
 $2(12) - 1 = \boxed{23}$

11. $g(4)$
 $= 2 - (4)^2$
 $= 2 - 16 = \boxed{-14}$

9. Write an equation in slope intercept form for the line that has a slope of $\frac{2}{3}$ and passes through $(2, 5)$.

$$5 = \frac{2}{3}(2) + b$$

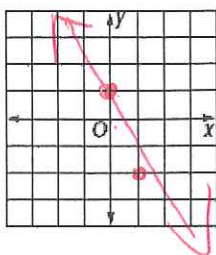
$$5 = \frac{4}{3} + b$$

$$\frac{15}{3} - \frac{4}{3} = b = \frac{11}{3}$$

$$\boxed{y = \frac{2}{3}m + \frac{11}{3}}$$

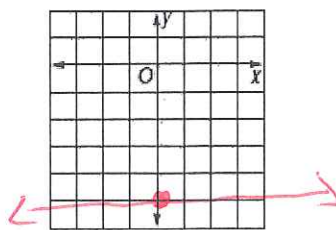
Graph the line that satisfies each set of conditions.

14. passes through $(0, 1)$, perpendicular to a line whose slope is $\frac{1}{3}$



$$m = -3$$

15. passes through $(0, -5)$, parallel to the graph of $y = 1$



$$y = 1 \text{ so } m = 0$$

10. Write the equation in slope-intercept form for the lines you graphed above.

$$1 = -3(0) + b$$

$$1 = b$$

$$y = -3x + 1$$

$$y = -5$$

11. Write an equation in slope-intercept form that passes through $(-2, 1)$, parallel to the line $y = 4x - 11$

$$m = 4$$

$$1 = 4(-2) + b$$

$$9 = b$$

$$y = 4x + 9$$