

Review Unit 2 Linear Equations and Inequalities

Function Notation. Find the requested value given the following three functions.

$$g(x) = x^2 + 4x + 2$$

$$h(x) = x^2 - 5x + 7$$

1. $g(6)$

$$36 + 24 + 2$$

$$g(6) = 62$$

2. $h(-2)$

$$4 + 10 + 7$$

$$h(-2) = 21$$

3. $g(x) - h(x)$

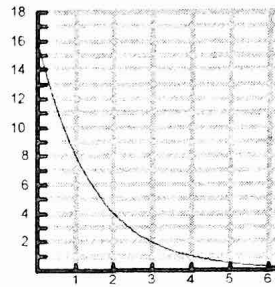
$$\cancel{x^2} + 4x + 2 - \cancel{x^2} + 5x$$

$$9x - 5$$

Evaluation Functions:

4. $f(2) = \underline{4}$

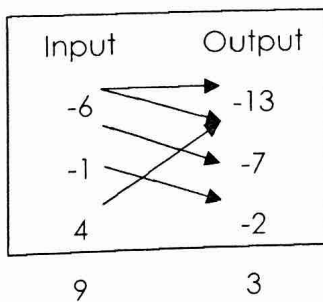
5. $f(4) = \underline{1}$



6. If $f(x) = 8$, then $x = \underline{1}$

Determine whether the relation is a function.

7.

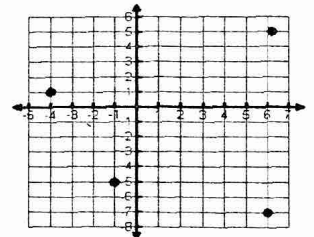


not b/c
of the
-6

8. $\{(-3,0), (4,1), (-3,2)\}$

not
b/c
of
-3

9.



yes

11. Solve for the indicated variable.

Solve for a; $2a + 6b = c$

$$a = -3b + \frac{1}{2}c \quad \frac{2a}{2} = \frac{-6b + c}{2}$$

Solve for x; $y = mx + b$

$$\frac{y-b}{m} = \frac{mx}{m}$$

$$\frac{y-b}{m} = x$$

12. a. Write an explicit and recursive rule for the sequence. b. Then find a_{50} .
1, 5, 9, 13, ...

R: $a_1 = 1$
 $a_n = a_{n-1} + 4$

E: $a_n = 4n - 3$

$a_{50} = 4(50) - 3$
 $a_{50} = 197$

13. a. Write an explicit recursive rule for the sequence.
Then find a_{20} .

R: $a_1 = 8$
 $a_n = a_{n-1} - 5$

8, 3, -2, -7, ...

E: $a_n = -5n + 13$

$a_{20} = -5(20) + 13$
 $a_{20} = -87$

24. You are taking a course that has four tests. To get a B in the course, you must have an average of at least 80% on the four tests. Your scores on the first three tests were 87, 86, and 75. What must you score on the fourth test to get an B for the course?

$$\frac{87 + 86 + 75 + x}{4} = 80$$

$$248 + x = 320$$

$$x = 72$$

25. The sum of three consecutive integers is 330. Find the largest of the three integers

$$x + x + 1 + x + 2 = 330$$

$$3x + 3 = 330$$

$$x = 109, 110, \text{ (111)}$$

26. The length of a rectangle is 6 inches longer than the width and the perimeter is 80 inches. Find the length of the rectangle

$$l = l + w$$

$$P = 80$$

$$2l + 2w = P$$

$$2(l + w) + 2w = 80$$

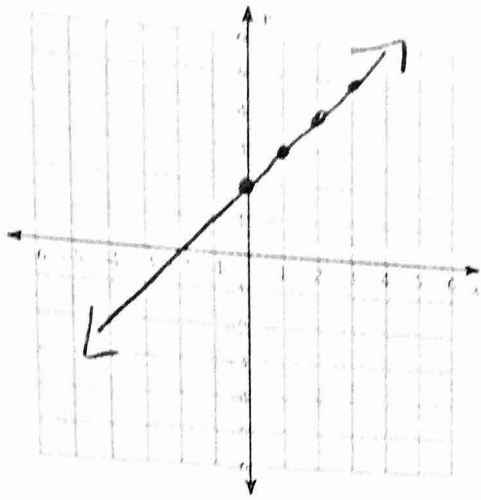
$$12 + 2w + 2w = 80$$

$$4w = 68$$

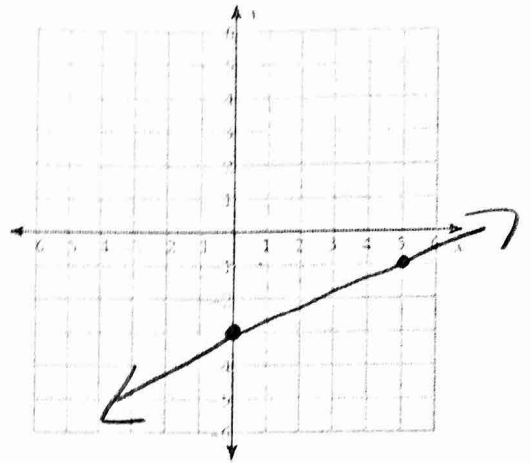
$$w = 17$$

$$l = 23$$

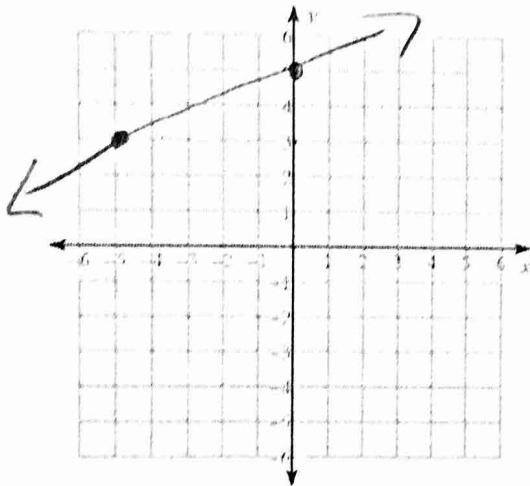
$$1) y = x + 2$$



$$2) y = \frac{2}{5}x - 3$$



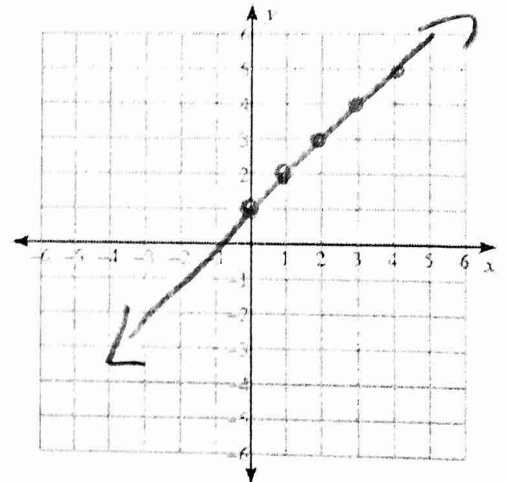
$$3) 2x - 5y = -25$$



$$-5y = \frac{-2x - 25}{-5}$$

$$y = \frac{2}{5}x + 5$$

$$4) x - y = -1$$



$$-y = -x - 1$$

$$y = x + 1$$

Solve each equation.

$$5) -8 = \frac{n}{16}$$

$$n = -128$$

$$6) n - 5 = -24$$

$$n = -19$$

$$7) 27 = 12 + b$$

$$b = 15$$

$$8) \frac{m}{16} = 17$$

$$m = 272$$

$$9) -2(1 + 5r) + 7 = 85$$

$$-2 - 10r + 7 = 85$$

$$-10r = 80$$

$$r = -8$$

$$10) 8(1 - 7m) = -384$$

$$m = -7$$

$$11) 103 = -(7x - 5) - 7x$$

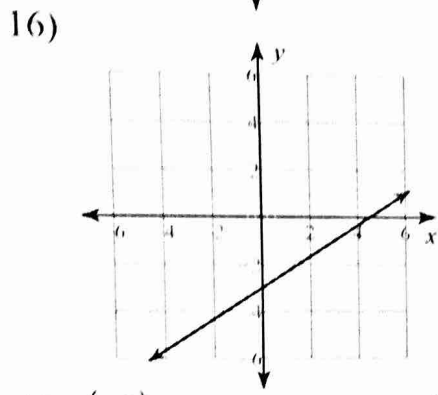
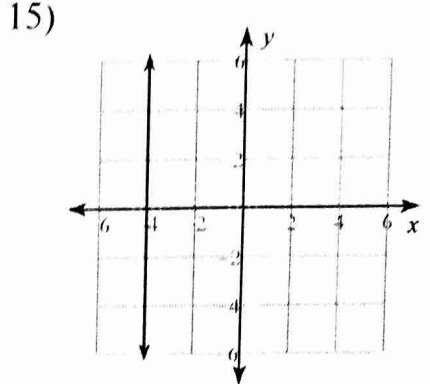
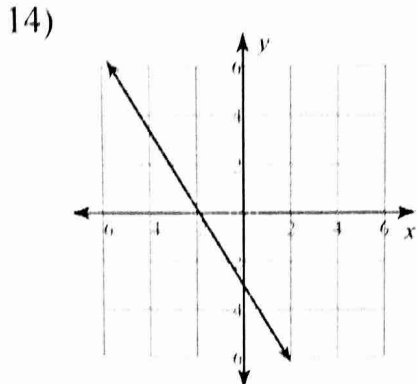
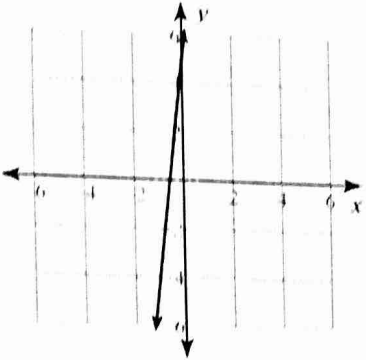
$$x = -7$$

$$12) 388 = -8(7p - 6) + 4$$

$$p = -6$$

Answers to Unit 2A Review (ID: 1)

- 1) 95 2) -45 3) 1 4) 188
 5) $x^2 - 3x + 8$ 6) $n^3 + 5n^2 - n - 4$ 7) $-a^2 + a - 5$ 8) $-3t - 6$
 9) 4 10) -23 11) $2n^3 + n + 5$ 12) $13x + 19$
 13)



- 17) {2} 18) {1}

- 19) {-3} 20) {8}

- 21) Explicit: $a_n = 19 - 30n$
 Recursive: $a_n = a_{n-1} - 30$
 $a_1 = -11$

- 22) Explicit: $a_n = 20 + 9n$
 Recursive: $a_n = a_{n-1} + 9$
 $a_1 = 29$

- 23) Explicit: $a_n = 20 - 10n$
 Recursive: $a_n = a_{n-1} - 10$
 $a_1 = 10$

- 24) Explicit: $a_n = -2 + 3n$
 Recursive: $a_n = a_{n-1} + 3$
 $a_1 = 1$