

Semester 2 Final Review

Name _____

____1. Solve the system of equations.

$$-5x + y = -5$$

$$-4x + 2y = 2$$

- a.
- $(-8, -15)$
- b.
- $(-2, -15)$
- c.
- $(0, 1)$
- d.
- $(2, 5)$

____2. Solve the system of equations.

$$3x + 2y = 7$$

$$y = -3x + 11$$

- a.
- $(6, -3)$
- b.
- $(6, -7)$
- c.
- $(-4, 19/2)$
- d.
- $(5, -4)$

____3. Sharon has some one-dollar bills and some five-dollar bills. She has 14 bills. The value of the bills is \$30. Solve a system of equations to find how many of each kind of bill she has.

- a. 4 five-dollar bills, 10 one-dollar bills c. 5 five-dollar bills, 5 one-dollar bills
-
- b. 3 five-dollar bills, 15 one-dollar bills d. 5 five-dollar bills, 9 one-dollar bills

____4. A jar containing only nickels and dimes contains a total of 60 coins. The value of all the coins in the jar is \$4.45. Solve the system to find the number of nickels and dimes that are in the jar.

- a. 30 nickels and 30 dimes c. 29 nickels and 31 dimes
-
- b. 31 nickels and 29 dimes d. 28 nickels and 32 dimes

____5. Simplify: $a^5 \cdot 3b^9 \cdot 6a$

- a.
- $18a^6b^9$
- b.
- $10a^6b^9$
- c.
- $18ab^{15}$
- d.
- $18a^{45}b^9$

____6. Simplify: $(5k^2)^3$

- a.
- $125k^6$
- b.
- $125k^5$
- c.
- $5k^6$
- d.
- $5k^8$

____7. Simplify: $\frac{x^{14}}{x^7}$

- a.
- x^7
- b.
- x^{98}
- c.
- $\frac{1}{x^7}$
- d.
- x^{21}

____8. Simplify: $\left(\frac{3x}{2}\right)^4$

- a.
- $\frac{81x^4}{16}$
- b.
- $6x^4$
- c.
- $\frac{12x^4}{8}$
- d.
- $\frac{81x^4}{2}$

____9. Simplify: $(2x^0y^2)^3$

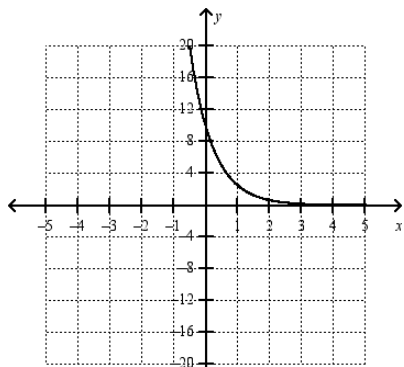
- a. 0 b.
- $6y^5$
- c.
- $8y^6$
- d.
- $8x^3y^5$

____10. Simplify: $(3p^4q^{-5})^{-2}$

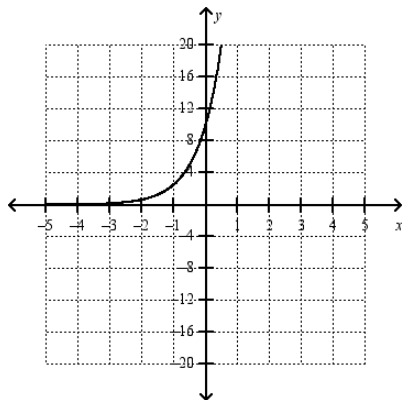
- a.
- $\frac{3p^2}{q^7}$
- b.
- $\frac{q^{10}}{9p^8}$
- c.
- $\frac{q^{25}}{6p^{16}}$
- d.
- $\frac{q^{25}}{9p^{16}}$

___ 11. Graph: $y = 10 \cdot 4^x$

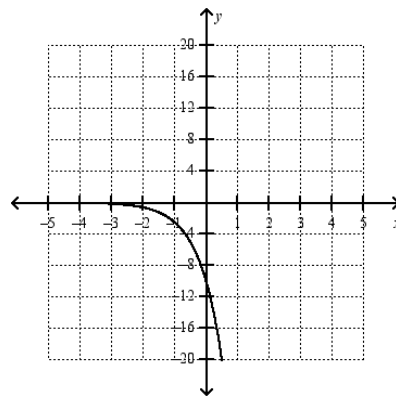
a.



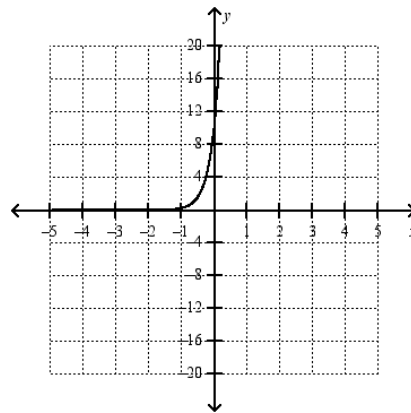
b.



c.



d.



___ 12. Suppose the population of a town is 15,200 and is growing 2% each year.

a. Write an equation to model the population growth.

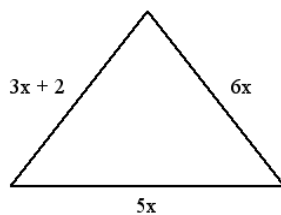
b. Predict the population after 11 years.

- a. $y = 15,200 \cdot 2^x$; about 18,899 people
- b. $y = 15,200 \cdot 1.02^x$; about 18,899 people
- c. $y = 2 \cdot 15,200^x$; about 334,400 people
- d. $y = 15,200 \cdot 2^x$; about 31,129,600 people

___ 13. A boat costs \$11,850 and decreases in value by 10% per year. How much will the boat be worth after 8 years?

- a. \$5,101.04
- b. \$11,770.00
- c. \$4,590.93
- d. \$25,401.53

___ 14. Write the perimeter of the figure.

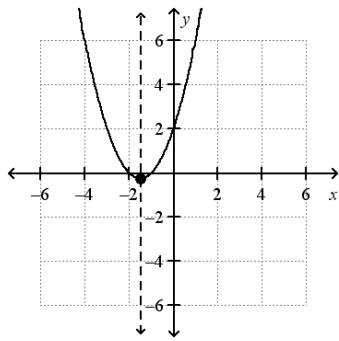


not to scale

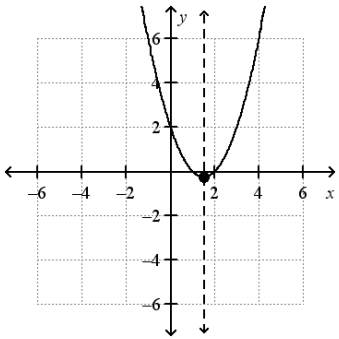
- a. $9x + 7x$
- b. $11x + 3x + 2$
- c. $14x + 2$
- d. $14x$

27. Graph $f(x) = x^2 + 3x + 2$

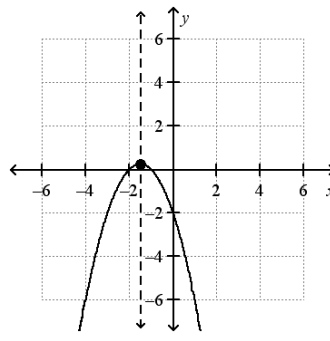
a.



b.



c.



28. Does the table represent a linear, exponential, or quadratic function?

x	y
0	3
1	0
2	-1
3	0
4	3

a. quadratic

b. linear

c. exponential

d. don't chose this answer!

29. Simplify: $-4\sqrt{160}$

a. $-4\sqrt{80}$

b. $-4\sqrt{16}$

c. $-16\sqrt{10}$

d. $\sqrt{10}$

30. Simplify: $4\sqrt{2} - \sqrt{2}$

a. $5\sqrt{2}$

b. $5\sqrt{4}$

c. $3\sqrt{4}$

d. $3\sqrt{2}$

31. Simplify: $\sqrt{10}(\sqrt{6} - 8)$

a. $\sqrt{60} - 8$

b. $\sqrt{60} - 8\sqrt{10}$

c. $\sqrt{16} - 8\sqrt{10}$

d. $2\sqrt{15} - 8\sqrt{10}$

32. Simplify: $\sqrt{50a^9b^{16}}$

a. $25a^3b^4$

b. $5a^3b^4\sqrt{2}$

c. $25ab^8\sqrt{a}$

d. $5ab^8\sqrt{2a}$

33. Simplify: $(4 + 2\sqrt{3})(1 - \sqrt{3})$

a. -2

b. $-2 - 2\sqrt{3}$

c. $4 - 4\sqrt{3}$

d. $5 + \sqrt{3}$