Name _____ Date _____

Algebra 2 – Summer Assignment

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Evaluate.

1) -3^4

Simplify.

2) $(80 + 4^2) \div 2 \cdot 2^2$

Evaluate the expression for the given replacement values.

3) $\frac{6x}{2} + \frac{5y}{10}$ for $x = 4$, $y = 8$

Simplify the expression.

4) $3x - 6(x + 3) - 2$

Solve the equation.

5) $11x + 27 = 2x - 36$

6) $5(y - 8) = 7y - 40$

Solve.

7) $-2|5x + 4| = -14$

Write the sentence as an equation. Use x to represent "a number."

8) Eleven subtracted from nine times a number is 43.

Solve.

9) Ben sold his used computer and accessories for $324. If he received eight times as much money for the computer as he did for the accessories, find how much money he received for the computer.

Multiply. Write the answer in simplest form.

10) $\frac{4}{7} \cdot \frac{6x}{12}$

Evaluate.

11) $\left(-\frac{1}{6}\right)^2$

Add or subtract as indicated. Write the answer in simplest form.

12) $\frac{4y}{5} - \frac{1}{40}$

Solve.

13) $3x + \frac{1}{5} = \frac{2}{3}$

Write the decimal as a fraction or mixed number in lowest terms.

14) 0.36

Round the decimal to the given place value.

15) 8.03, nearest tenth

Solve.

16) There are 0.5 milligrams of iron in a 3.5 ounce serving of cod. How much iron is in 5 ounces of cod? Round the answer to one decimal place.

Translate to an equation and solve.

17) 45 is what percent of 30?

18) What number is 20% of 36?

Find the square root.

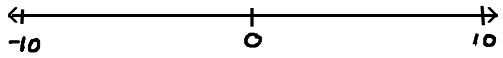
19) $\sqrt{\frac{12}{100}}$

Simplify by factoring. Assume that all expressions under radicals represent nonnegative numbers.

20) $\sqrt{24}$

Graph the inequality.

21) $2 \leq x \leq 6$



Solve using the addition and multiplication principles.

22) $-6a - 4 \geq -5a + 7$

Solve the problem.

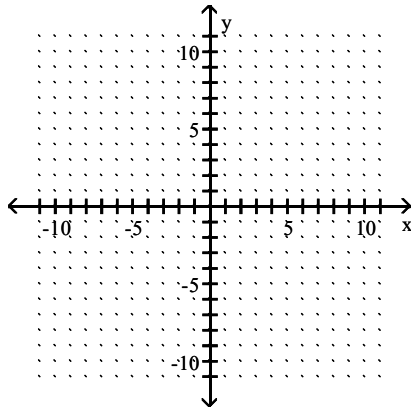
23) One side of a rectangle is 10 inches and the other side is x inches. What values of x will make the perimeter at least 32?

Find the coordinates of the y–intercept for the given equation.

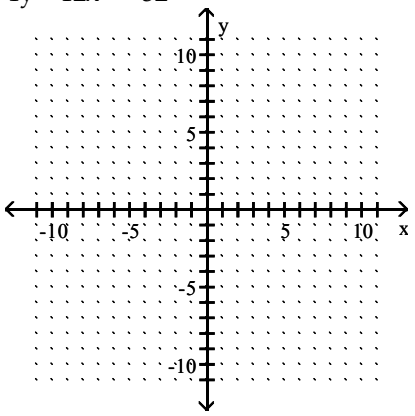
24) $y = 9x - 6$

Graph the linear equation.

25) $y = 2x + 4$

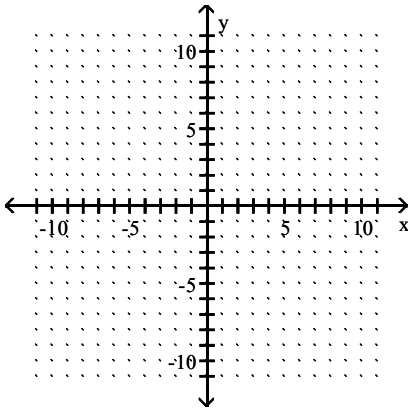


26) $4y - 12x = -32$

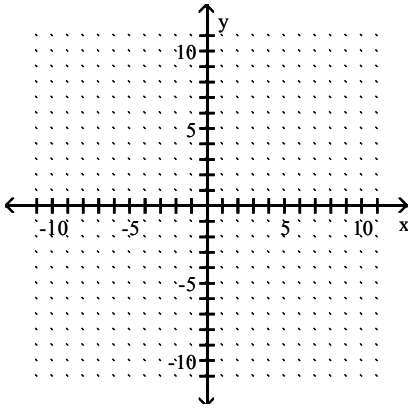


Graph.

27) $x = -1$

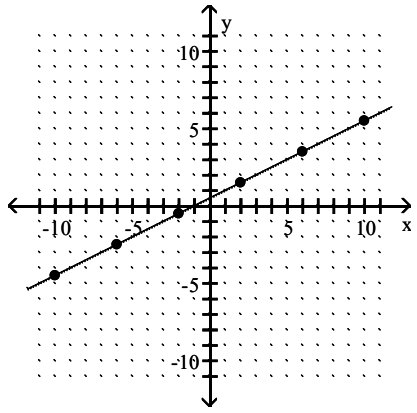


28) $y = 2$



Find the slope of the line.

29)



30) $4x - 5y = 22$

Simplify.

31) $(-3x^2y)^6$

32) $\left(\frac{a^2}{b^3}\right)^{-2}$

Divide and simplify.

33) $\frac{t^6}{t^8}$

34) $\frac{3x^2}{4} \div \frac{x^3}{8}$

Express using positive exponents. Then simplify.

35) -4^{-2}

Add.

36) $(2 + 3n^5 - 5n^3) + (4n^5 - 5n^3 + 7)$

Subtract.

37) $(13a^4 - 7a^2) - (-15a^4 + 2a^2)$

Multiply.

38) $(-2x^2)(7x^3)$

Find the product.

39) $4x^4(10x^4 + 3x^3)$

Multiply.

40) $(5x + 11)(x - 6)$

Factor.

41) $36m^8 - 40m^5 - 12m^3$

Factor completely.

42) $x^2 + 2x - 63$

43) $x^2 - 3x - 108$

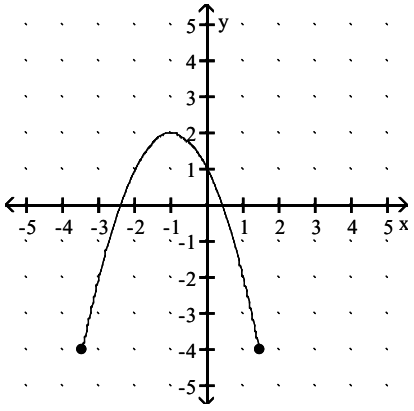
Solve the equation.

44) $(x - 6)(x + 8) = 0$

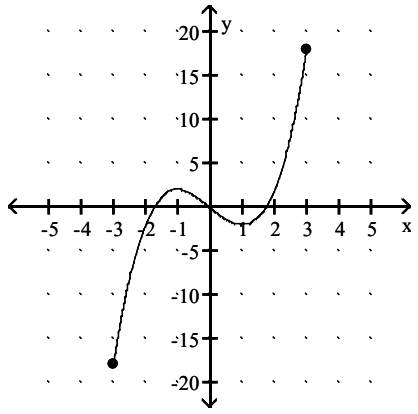
45) $b(b + 17) = 0$

For the function represented in the graph, determine the domain or range, as requested.

46) Find the range.



47) Find the domain.



Solve the system by substitution. If the system is inconsistent and has no solution, state this. If the system is dependent, write the form of the solution for any real number x.

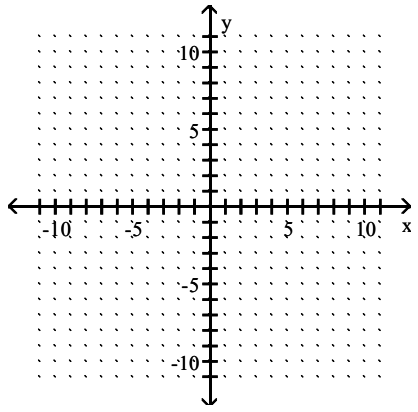
48) $x = 20 - 4y$
$4x + 3y = 41$

Solve the system using the addition method. If the system is inconsistent and has no solution, state this. If the system is dependent, write the form of the solution for any real number x.

49) $x - 5y = -4$
$8x - 6y = 36$

Graph the inequality.

50) $2x + 5y \leq 10$



Factor completely.

51) $20x^2 + 31x + 12$

Factor the perfect square trinomial completely.

52) $81x^2 - 36x + 4$

Factor the binomial completely.

53) $9x^2 - 4$

Graph.

54) $f(x) = x^2 - 3x - 9$