

Math 0095 Practice Final

Perform the indicated operation.

1) $\frac{-2 - (-6 + 8)}{-8 - (-2)}$

Solve the equation by first clearing the fractions.

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

Solve the equation.

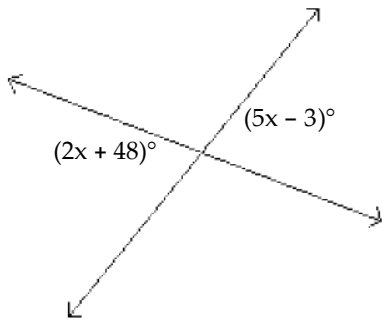
3) $3 - (x - 5) = -5x + 4(x + 9)$

4) $-\frac{9}{10}x = -81$

5) Solve for B. $H = \frac{2A}{b + B}$

Solve the problem.

6) Find the measure of each marked angle.

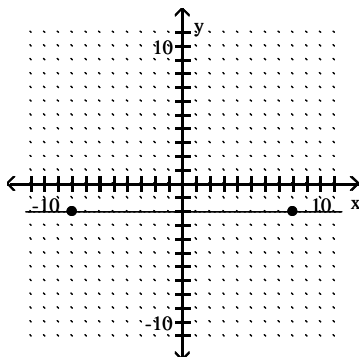


Solve the proportion.

7) $\frac{x + 6}{3} = \frac{x + 8}{6}$

Decide whether the slope is positive, negative, zero, or undefined.

8)



Determine whether the graphs of the equations are parallel lines, perpendicular lines, or neither.

9) $12x + 4y = 16$
 $y = -3x + 5$

Evaluate the function.

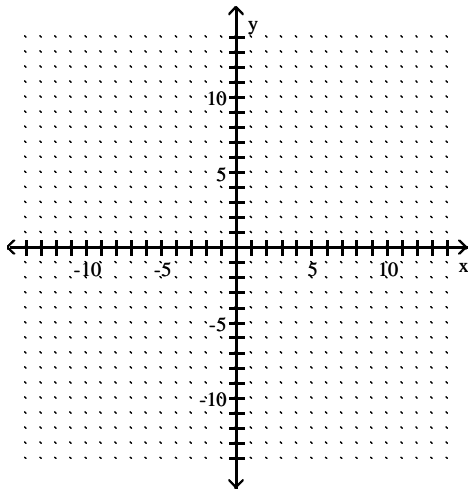
10) Given $f(x) = 6x^2 + 6x - 1$, find $f(-5)$.

Find the slope and y intercept of the line.

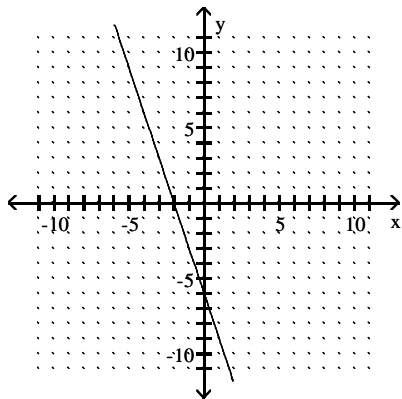
11) $3x - 5y = 30$

Graph the linear equation.

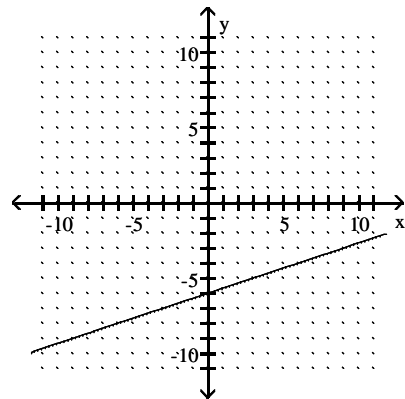
12) $y = 3x - 6$



A)

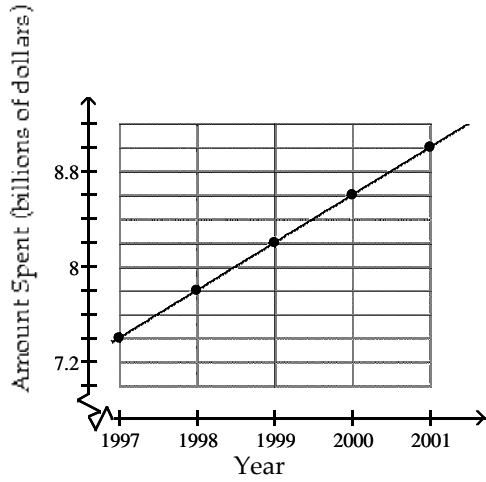


B)



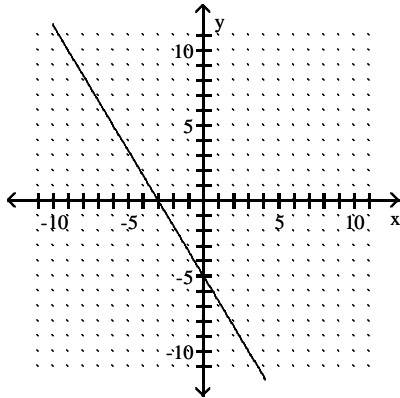
Solve the problem.

- 13) Data regarding the amount spent by a government department is represented in the following graph. Find the slope of the line by using any two of the points shown on the line. Is the slope equal to the yearly change in amount spent?

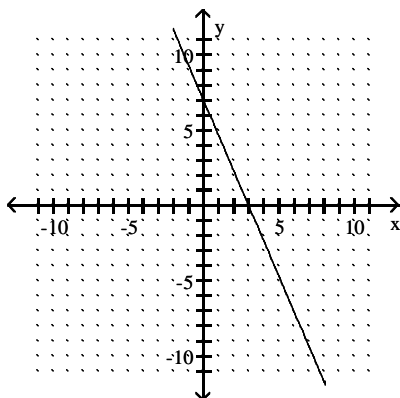


Use the geometric interpretation of slope (rise divided by run) to find the slope of the line. Then, by identifying the y-intercept from the graph, write the slope-intercept form of the equation of the line.

14)



15)



Write an equation of the line through the given point with the given slope. Write the equation in slope-intercept form.

- 16) $(3, 2)$; $m = -6$

Decide whether or not the ordered pair is a solution of the system.

17) $(-3, 2)$
 $4x = -10 - y$
 $3x = -1 - 4y$

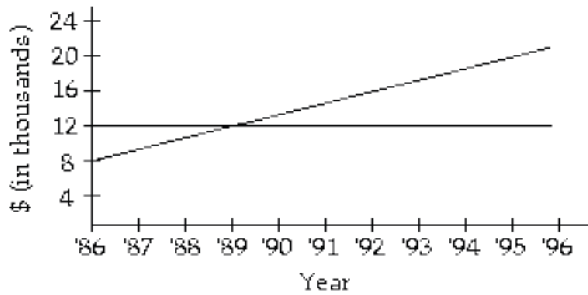
Decide whether the ordered pair is a solution of the given system.

18) $x + y = -4$
 $x - y = 6 ; (-1, -5)$

Solve the problem.

19) State your variables. Show your equations and work. Ron and Kathy were ticket-sellers at their class play, Ron handled student tickets that sell for \$2.00 each and Kathy sold adult tickets for \$6 each. If their total income for 33 tickets was \$150, how many did Ron sell?

20) Emilia doesn't trust banks, so her savings are hidden under her mattress. Alla has her savings in an investment at simple interest. In approximately what year did they have the same amount?



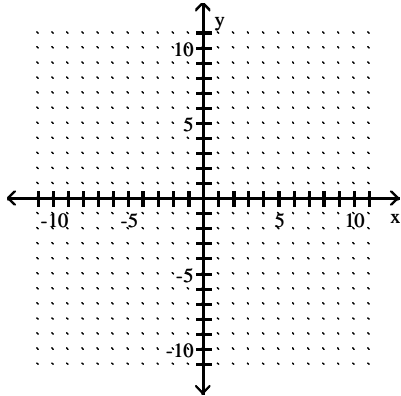
Solve the system by elimination.

21) $-5x - 4y = -3$
 $-10x - 8y = 6$

22) $8x + 3y = 32$
 $-5x + 3y = 19$

Solve the system by graphing.

$$\begin{aligned} 23) \quad & 3x - 2y = 11 \\ & 2x + 3y = 16 \end{aligned}$$



A) $\{(5, 2)\}$

B) $\{(3, 10)\}$

C) $\{(2, 5)\}$

D) \emptyset

Solve the system by substitution. If the system is inconsistent or has dependent equations, say so.

$$\begin{aligned} 24) \quad & x = -28 - 7y \\ & 7x + 6y = 19 \end{aligned}$$

Find the product.

$$25) (2x - 5)(x - 4)$$

Find the square.

$$26) (w - 6)^2$$

Subtract.

$$27) (6n^5 - 13n^4 + 17) - (14n^4 + 4n^5 + 11)$$

Complete the factoring.

$$28) x^2 - 2x - 8 = (x + 2)(\quad)$$

Factor completely.

$$29) 2z^2 - z - 15$$

Factor by grouping.

$$30) 6z^2 + 5z - 6$$

Factor .

$$31) x^2 + 11x + 28$$

Factor completely.

$$32) 18x^2 - 78x - 60$$

$$33) x^2 - 6xy + 9y^2$$

Factor out the greatest common factor.

$$34) 3x^2y^4 + 9x^2y^3$$

Factor the polynomial completely.

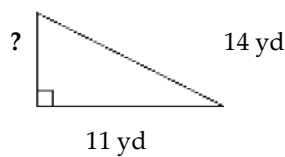
$$35) 9x^2 - 25$$

Solve the equation.

$$36) x^2 - 3x = 40$$

Solve the problem.

37) The diagram below shows a rope connecting the top of a pole to the ground. The rope is 14 yd long and touches the ground 11 yd from the pole. How tall is the pole? Round approximations to the nearest tenth.



Add or subtract. Write the answer in lowest terms.

$$38) \frac{-2x + 7}{x} + \frac{-6x - 6}{7x}$$

$$39) \frac{6}{11x} + \frac{2}{11x}$$

Divide. Write the answer in lowest terms.

$$40) \frac{x^2 - 16}{x} \div \frac{5x + 20}{x - 4}$$

Find any values of the variable for which the rational expression is undefined. Write answer with \neq .

$$41) \frac{6}{z + 6}$$

Multiply. Write the answer in lowest terms.

$$42) \frac{4x^2}{5} \cdot \frac{40}{x^3}$$

Perform the indicated operation and simplify.

$$43) \frac{5}{24} - \frac{7}{4x}$$

Solve the equation.

$$44) \frac{4}{x} - \frac{2}{3x} = \frac{10}{9}$$

Find the perimeter of the figure.

45) A rectangular coal bin has a length of $\sqrt{20}$ feet and a width of $\sqrt{45}$ feet. What is its perimeter?

Find the product and simplify, if possible.

46) $\sqrt{2} \cdot \sqrt{7}$

Find the square root.

47) $-\sqrt{100}$

Identify the given number as "Rational", "Irrational", or "Not a real number". If the number is rational, give its exact value. If the number is irrational, give a decimal approximation to the nearest thousandth.

48) $\sqrt{-64}$

Simplify the expression.

49) $(\sqrt{7} - 2)(\sqrt{5} + 3)$

50) $\sqrt{3}(\sqrt{5} - \sqrt{7})$

Simplify the radical.

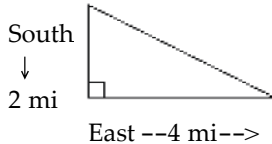
51) $\sqrt{72}$

Solve the equation.

52) $2\sqrt{x} = \sqrt{9x + 5}$

Solve the problem. Give the answer to the nearest thousandth if necessary.

53) A long-distance runner runs 2 miles south and then 4 miles east. How far is the runner from the starting point?



Solve the equation. Express radicals in simplest form. You MUST show work here.

54) The Quadratic Formula is: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

$$6m^2 + 12m + 3 = 0$$

55) The Quadratic Formula is: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

$$p^2 - 22p + 121 = 0$$

Solve the equation. Express radicals in simplest form.

$$56) \quad t^2 = \frac{9}{16}$$