

Name _____ Elementary Algebra Test 4 Mike Huff

(4 points)

1. Simplify:

a)
$$\frac{5[4(3-6)^2]}{6 \cdot 2 - (-3)^2}$$

b)
$$3[8x - 4(5x - 2)] - (6 - 7x)$$

(3 points)

2. Evaluate: $\frac{2x^3y^2}{x^2 - y}$ for $x = -2$ and $y = -1$

(3 points)

3. Multiply: $(3x - 5y)^2$

(3 points)

4. Subtract: $(9x^3y + 4x^2y - 3xy - 5) - (-3x^3y + 2x^2y - x)$

(6 points)

5. Simplify and write the final answers with positive exponents only:

a. $5x^0$

b. $\frac{x^{-4}}{x^{-6}}$

c. $\left(\frac{-a^{-2}b^{-4}}{3b^{-2}c}\right)^{-2}$

(3 points)

6. Multiply: $(2x + 1)(3x^2 - 2x + 1)$

(3 points)

7. Divide: $\frac{y-5}{5-y}$

(10 points)

8. Factor completely:

a) $2x^2 + 24x + 72$

b) $2x^2 - 2xy - 12y^2$

c) $x^3 + 2x^2 - x - 2$

d) $x^3 - x$

e) $2x^2 - 5x - 3$

(3 points)

9. Solve for m : $K = \frac{m-3}{L}$

(3 points)

10. Simplify:

a. $-\sqrt{121}$

b. $\sqrt{0}$

c. $\sqrt{144}$

Solve the following for x and simplify your answer if possible: (3 points each)

11. $3(4x-3) > 2x-5$

12. $3(2x+3) - 4(-x+1) = 7x-10$

13. $x^2 = 64$

14. $x(2x - 3) = 2$

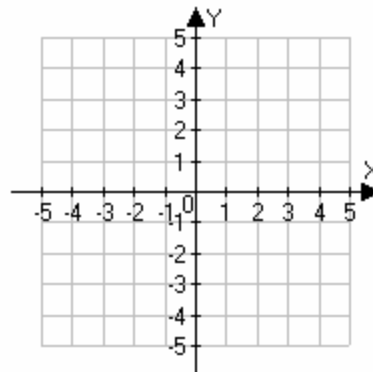
(3 points)

15. $2x^2 - 4x - 3 = 0$ Hint: You will need the quadratic formula: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

(4 points)

12. For the linear equation $6x - 4y = 12$:

- a) Find the x and y intercepts
- b) Find the slope
- c) Graph the line

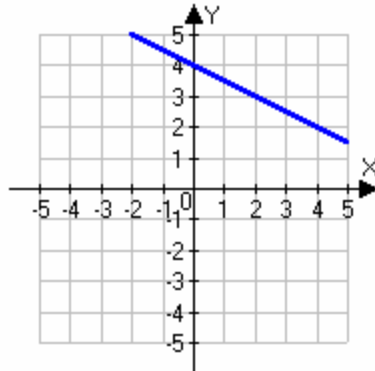


(4 points)

13. Find an equation of the line containing the point $(-3, 2)$ with slope $m = -\frac{2}{3}$

(4 points)

14. Find the slope of the line from the graph. Write the equation of the line.



(4 points)

15. Find the following:

- a) The slope of the line passing through the points $(-3, 2)$ and $(3, -7)$.
- b) Find an equation of the line described in part (a).

(4 points)

16. Solve the system of linear equations by any method

$$\begin{cases} 3x - 2y = 10 \\ 4x - 3y = 15 \end{cases}$$

(3 points)

17. A computer is on sale for a 32% reduction. If the sale price is \$1360.00, what was the original price?

(3 points)

18. The second angle of a triangle is 3 times as large as the first. The third angle is 20 degrees less than the sum of the other two angles. Find the measure of each angle.

(3 points)

19. Two angles are complementary. One of two complementary angles is 10 degrees more than twice the other. Find the measure of each angle.

(3 points)

20. Juan wishes to mix pecans worth \$2.52 per pound with almonds worth \$3.80 per pound to make 480 pounds of a mixture worth \$3.44 per pound. How much of each should he use?

(3 points)

21. The length of a rectangle is seven feet less than two times the width. Find the length and width if the area is 28 square feet.

(3 points)

22. A water pipe runs diagonally under a rectangular garden that is 7 feet longer than it is wide. If the pipe is 13 feet long, what are the dimensions of the garden?

(6 points)

23. Perform the indicated operation. If possible, simplify (reduce) your answer:

a) $\frac{x^2}{x-4} - \frac{2x+8}{x-4}$

b) $\frac{x^2+5x+4}{x^2-4} \div \frac{x^2+8x+7}{x^2+5x-14}$

Name _____

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Elementary Algebra
Test 4
Mike Huff
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Tools: Calculator and scrap paper