

I want my students to be able to come into my class....

$$\frac{0}{\#} = 0$$

$$\frac{\#}{0} = \text{undefined}$$

\*operations with negative #

Simplify each expression using the order of operations. Show all work.

1.  $2 \cdot -3^2 + 4$

$$2 \cdot -9 + 4$$

$$-18 + 4$$

-14

2.  $2(2 + 12 \div 4)$

$$2(2 + 3)$$

$$2(5)$$

10

3.  $\frac{5 + 10 \div 2 - 2}{2(3^2 - 9)}$

$$\frac{5 + 5 - 2}{2(0)}$$

undefined

4.  $20 - \frac{1}{2} \cdot 8^2$

$$20 - \left[ \frac{1}{2} \cdot 64 \right]$$

$$20 - 32$$

-12

5.  $\frac{3}{4} [13 - (2 + 3)]^2$

$$\frac{3}{4} [13 - (5)]^2$$

$$\frac{3}{4} [8]^2$$

48

$$\frac{3}{4} \cdot \frac{16}{1}$$

6.  $\frac{12 \cdot 1 - 13 + 1}{3 - 7} \div \frac{-5}{2}$

$$\frac{12 - 13 + 1}{-4} \div \frac{-1 + 1}{-4} \quad 0 \cdot \frac{2}{-5}$$

0

Evaluate the expression if  $a = 2$ ,  $b = -3$ ,  $c = 4$  and  $d = -1$ . Show all work.

Hint: Use parentheses when substituting.

7.  $-2a + 4b - d$

$$-2(2) + 4(-3) - (-1)$$

$$-4 - 12 + 1$$

$$-16 + 1$$

-15

8.  $3ab - 5cd^2 + 10$

$$3(2)(-3) - 5(4)(-1)^2 + 10$$

$$-18 - 20 + 10$$

$$-38 + 10$$

-28

9.  $-15 - b + ac \div \frac{d - 1^2}{\sqrt{c}}$

$$-15 - (-3) + (2)(4) \div \frac{-1 - 1}{\sqrt{4}} - \frac{2}{2}$$

$$-15 + 3 + 8 \div -1$$

$$-15 + 3 + -8$$

$$-12 + -8$$

-20

10.  $\frac{-3ac}{2} \cdot \frac{\sqrt{9} \cdot d}{bd - d}$

$$\frac{-3(2)(4)}{2} \cdot \frac{3 \cdot (-1)}{(-3)(-1) - (-1)}$$

$$-\frac{24}{2} \cdot \frac{-3}{3 + 1}$$

$$-12 \cdot \frac{-3}{4} \quad \frac{36}{4} = 9$$

9

Simplify by combining like terms, distributing or both. Show all work.

11.  $2x + 3x - x$   $4x$   
 $5x - x$

12.  $-2(x-3)$   $-2x+6$

13.  $-5x - 4x - 9x$   $-18x$   
 $-9x - 9x$

14.  $2(3x+4) - 5x$   $x+8$   
 $6x+8-5x$

15.  $-(3x-2) + 4 - 2(-2x+3)$   $x$   
 $-3x+2+4+4x-6$

16.  $2x + 4(3x-8) - 4$   $14x-36$   
 $2x+12x-32-4$

17.  $4 + 2(-x+2) + 2x - 3$   $5$   
 $4-2x+4+2x-3$   
 $8-3$

18.  $-3(7x-2) + 8(-2x+1)$   $-37x+14$   
 $-21x+6-16x+8$

Solve each equation. Show all work.

19.  $x-3=-8$   $x=-5$   
 $+3+3$

20.  $10 = x + 5 - 2x$   $x=-5$   
 $10 = -x + 5$   
 $-5$

21.  $-x-1 = -1(-x-3)$   $x=-2$   
 $-x-1 = x+3$   
 $-4 = 2x$

22.  $2x = 8 + 2$   $x=5$   
 $5 = \frac{x}{2}$   
 $\frac{2x}{2} = \frac{10}{2}$

23.  $\frac{1}{2}x = -7$   $x=-14$   
 $\cdot 2$

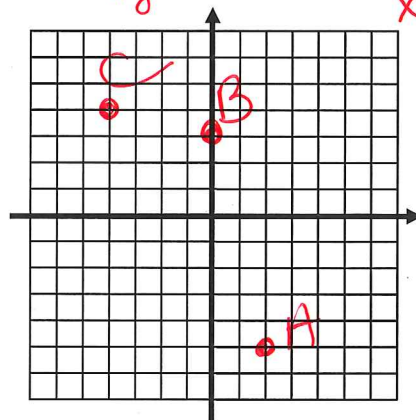
24.  $-12 = -6x + 2(x-4)$   $x=1$   
 $-12 = -6x + 2x - 8$   
 $-12 = -4x - 8$   
 $+8+8$   
 $-4x = -4$   
 $x=1$

Graph and LABEL the following points on the coordinate plane.

25. **A** (2, -5)

26. **B** (0, 3)

27. **C** (-4, 4)



points in ( , )

Use an ordered pair to write the location of each point on coordinate plane.

28. D

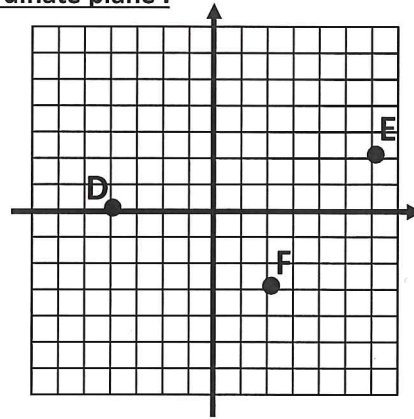
$(-4, 0)$

29. E

$(6, 2)$

30. F

$(2, -3)$



Reduce each fraction.

31.  $\frac{4}{18} = \frac{2}{9}$

32.  $\frac{-3}{-9} = \frac{1}{3}$

33.  $-\frac{15}{12} = -\frac{5}{4}$

34.  $-\frac{20}{5} = -4$

Simplify.

35.  $\frac{2}{3} + \frac{4}{3} = \frac{6}{3} = 2$

36.  $\frac{1}{4} + \frac{3}{8} = \frac{2}{8} + \frac{3}{8} = \frac{5}{8}$

37.  $\frac{5}{6} - \frac{1}{3} = \frac{5}{6} - \frac{2}{6} = \frac{3}{6} = \frac{1}{2}$

38.  $\frac{1}{2} \cdot \frac{18}{1} = 9$

39.  $-\frac{3}{4} \div \frac{12}{1} = -\frac{3}{4} \cdot \frac{1}{12} = -\frac{3}{48} = -\frac{1}{16}$

40.  $\frac{5}{8} \cdot \frac{21}{15} = \frac{5 \cdot 21}{8 \cdot 15} = \frac{105}{120} = \frac{7}{8}$

Find the slope given two points:

41. (1, 2) (9, 6)  $m = \frac{1}{2}$   
 $m = \frac{6-2}{9-1} = \frac{4}{8} = \frac{1}{2}$

$m = \frac{y_2 - y_1}{x_2 - x_1}$

42. (-3, -1) (-2, -3)  $m = -2$   
 $m = \frac{-3 - (-1)}{-2 - (-3)} = \frac{-3 + 1}{-2 + 3} = \frac{-2}{1} = -2$

43. Two sides of a triangle measure 8 in and 10 in. If the perimeter of the triangle is 22 inches, find the third side of the triangle.



$x + 8 + 10 = 22$   
 $x = 4$

4 inches

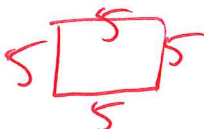
44. The perimeter of an equilateral triangle is 45 inches. What is the length of one side?



$3x = 45$   
 $x = 15$

15 inches

45. The side of a square is 5 inches. What is the area of the square?



$A = s^2$   
 $A = 5^2$

25 in<sup>2</sup>