

1. Evaluate the expression $\frac{1}{2}a - \frac{3}{4}a$ for each of the following values of a:

a. $a = 2$

$$\frac{1}{2}(2) - \frac{3}{4}(2) = \frac{2}{2} - \frac{6}{4} = \frac{4}{4} - \frac{6}{4} = -\frac{2}{4} = -\frac{1}{2}$$

or $\frac{1}{2}a - \frac{3}{4}a = \frac{2}{4}a - \frac{3}{4}a = -\frac{1}{4}a = -\frac{1}{4}(2) = -\frac{2}{4} = -\frac{1}{2}$

b. $a = -2$

from above: $\frac{1}{2}a - \frac{3}{4}a = -\frac{1}{4}a \rightarrow -\frac{1}{4}(-2) = \frac{2}{4} = \frac{1}{2}$

c. $a = \frac{1}{2}$

from above: $\frac{1}{2}a - \frac{3}{4}a = -\frac{1}{4}a \rightarrow -\frac{1}{4}\left(\frac{1}{2}\right) = -\frac{1}{8}$

2. Evaluate for $x = 2$ and $y = -3$:

a. $x - y = 2 - (-3) = 2 + 3 = 5$

b. $-y^2 - x^2 = -(-3)^2 - (2)^2 = -9 - 4 = -13$

c. $\frac{x+1}{4-y} = \frac{2+1}{4-(-3)} = \frac{2+1}{4+3} = \frac{3}{7}$

3. Simplify as much as possible: $2(5a-2b) - 3a(3a+4) =$

$$10a - 4b - 9a^2 + (-12a)$$

$$= -2a - 4b - 9a^2$$

4. Evaluate the expression in question #3 when $a=0$ and $b=0.1$

$$= -2(0) - 4(0.1) - 9(0)^2$$

$$= 0 - 0.4 - 0$$

$$= -0.4$$

5. For the equation $|x| + 3 = 7$ list a value for x that is:

- a. a solution to the equation

$$x = 4 \quad \text{or} \quad x = -4$$

- b. not a solution to the equation.

many possible answers \rightarrow any number except 4 or -4