MATH 4. Classwork # 15



1. Positive or negative value of m will make the following equalities true?

$$|m| = m$$
$$|m| = -m$$

$$m = -m$$
$$m + |m| = 0$$

$$-m = |-m|$$

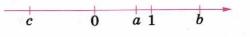
$$m + |m| = 2m$$

$$m = |-m|$$

$$m - |m| = 2m$$

Numbers a, b and c are marked on the number line below:

Which of the following statements are true?



a.
$$a \cdot b < b \text{ or } a \cdot b > b$$

b.
$$a \cdot b \cdot c < a \text{ or } a \cdot b \cdot c > a$$
 c. $-a \cdot c < c \text{ or } -a \cdot c > c$

c.
$$-a \cdot c < c \text{ or } -a \cdot c > c$$

3. Rewrite without the parenthesis:

a.
$$a - (b - (c + 4)) =$$

b.
$$x - (3 - (x + 6)) =$$

c.
$$a - (a - (a - 10)) =$$

d.
$$c - (c - (c - d)) =$$

Complex fractions:

$$\frac{6}{1-\frac{1}{3}} =$$

$$\frac{\frac{1}{2} + \frac{3}{4}}{\frac{1}{2}} =$$

$$\frac{1-\frac{1}{6}}{2+\frac{1}{6}}=$$

$$\frac{\frac{7}{10} + \frac{1}{3}}{\frac{7}{10} + \frac{1}{2}} =$$

Solve the following equations:

$$3 - \frac{5}{7}t = 1 - \frac{3}{7}t;$$

$$\frac{1}{8}u - 2 = \frac{5}{8}u + 1$$

$$|3(x-5)| = 21$$

$$| 8x - 10 | = 6$$

$$|2x| = 42$$

Simplify the following expressions:

a)
$$-(m-a) - (k+a) =$$

b)
$$m + (k - a - m) =$$

c)
$$m - (a + m) - (-a - m) =$$

d)
$$a - (a - b)$$

Simplify the following expressions:

a)
$$2a + 3(a + b) - 3b =$$

b)
$$5(m-3n)+14n =$$

A swimming pool can be filed by one pipe in 5 hours, by another pipe in 10 hours and by a third pipe in 15 hours. How long it will take to fill up the pool if all three pipes are working?