

1. Remove parentheses and simplify the following expressions.

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

(b). $10 - [3x + 2 - (6x + 7)] = 15 + 3x$

(c). $(3a - b) - [2a - (a + b)] = 2a$

(d). $x - 2(x + 3y) + 4y = -x - 2y$

(e). $[(a + 3b) - a] - [a - (a - 3b)] = 0$

(f). $(a + 1) - \{(a - 2) + 2[(x + 3) - 4(x + 4)]\} = 6x + 29$

2. Evaluate the following absolute value expressions.

(a). $|4 - 9| = 5$

(b). $|4| - |9| = -5$

(c). $|4| - |-9| = -5$

(d). $|-3| - |5 - 2| = 0$

(e). $||2 - 3| - |-7 + 1|| = 5$

(f). $\frac{3 - |-4|}{|2^2 - 3^2|} = -\frac{1}{5}$

1 parentheses/abs value

2 exponents/powers

3 multiplication/division

4 addition/subtraction

3. Evaluate the following without a calculator. Remember order of operations.

$$(a). \frac{(-7)(-8)}{-14} = -4$$

$$(b). \frac{(-15)(4)}{(2)(-10)} = 3$$

$$(c). 3 + 8 \div 4 + 3 = 8$$

$$(d). (-2) \cdot 4 + 10 \div 5 = -6$$

$$(e). (-1)^3 - 2(3 - 5) = 3$$

$$(f). 2 + 3 \cdot 2 - (4 - |6 - 8|) = 6$$

$$(g). 3 \cdot 8 \div 2 \div 2 = 6$$

$$(h). \frac{(-4)(5) - 5^2}{(-2)^2 + 3^2} = -\frac{45}{13}$$

$$(i). \frac{-4 \cdot 5 - 5^2}{-2^2 + 3^2} = -9$$

$$(j). \frac{4 + 2(3 - 5) - 2 \cdot 3}{|2 - 4| + 2 \cdot 3 - 1} = -\frac{6}{7}$$