

1. Remove parentheses and simplify the following expressions.

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

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

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

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

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

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

2. Evaluate the following absolute value expressions.

(a). $|4 - 9|$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Answers:

1. (a). $-x + 3y + z$ (b). $15 + 3x$ (c). $2a$ (d). $-x - 2y$ (e). 0 (f). $6x + 29$

2. (a). $= 5$ (b). -5 (c). -5 (d). 0 (e). 5 (f). $-\frac{1}{5}$

3. (a). -4 (b). 3 (c). 8 (d). -6 (e). 3 (f). 6 (g). 6 (h). $-\frac{45}{13}$ (i). -9 (j). $-\frac{6}{7}$