

1. Perform each of the indicated operations.

(a) $\sqrt{60 \div 4 \div 5 + 1} =$

(b) $20 - |32 \div (-2)| =$

(c) $\frac{-3^2 + 30 \div (-2)}{-4} =$

(d) $(9 - 6)^2 =$

(e) $9^2 - 6^2 =$

(f) $16 - \sqrt{2^3 - 2^2} - 5 =$

(g) $\sqrt{25} \cdot \frac{-3^5 + (-1)^3}{|(-5)^3 - |6 + (-5)^3||} =$

(h) $\frac{3 + (6^2 - 3^2) + (3^3 - 2^3) - 9}{4^2 + (5 - 3)^2} =$

(i) $\sqrt{\sqrt{3^6} - 2(3^2 + 3^3) + 2(4(17 - 2^3) - 3^2)} =$

(j) $2 \cdot 3^2 - (6 - 4 + (6 \cdot 4 - 3(2^4 - 12))) =$

2. Let $a = -4$, $b = 2$, and $x = -3$. Evaluate each of the following expressions.

(a) $a^2 - b^2 =$

(b) $(a - b)^2 =$

(c) $a^b - 2bx + x - |2x| =$

(d) $\frac{-x^2 + (x + 2)^2}{(x - 1)} =$

(e) $\frac{x - 1}{x + 3} =$

3. Simplify each of the following expressions. Show all steps.

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

(b) $4(2a - b) - 3(2a - 4b) =$

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

(d) $(2a - 2b) - (b - a) =$

(e) $-(3a - 2) - (1 - 4a) =$