

Problem Set 1

If you have difficulties, check out the detailed solutions for Sample Problems 1.

Perform the indicated operations.

1. $\sqrt{120 \div 4 \div 2 + 1} =$

2. $18 - |24 \div (-3)| =$

3. $\frac{-2^2 + 24 \div (-3)}{-3} =$

4. $(7 - 2)^2 =$

5. $7^2 - 2^2 =$

6. $18 - \sqrt{5^3 - 5^2} - 1 =$

7. $\sqrt{16} \cdot \frac{-2^5 + (-1)^3}{|(-2)^3 - |5 + (-2)^3||} =$

8. $\frac{5 + (5^2 - 3^2) + (5^3 - 3^3) - 3}{5^2 + (5 - 3)^2} =$

9. $\sqrt{\sqrt{2^6} - 2(3^2 + 2^3) + 3(2(15 - 2^3) - 2^2)} =$

10. $3 \cdot 2^2 - (7 - 3 + (3 \cdot 5 - 2(2^4 - 10))) =$

Let $a = -5$, $b = 2$, and $x = -2$. Evaluate each

of the following expressions.

11. $a^2 - b^2 =$

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

13. $a^b - 2bx + x - |2x| =$

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

15. $\frac{x - 2}{x + 2} =$

Simplify each of the following expressions.

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

17. $3(2a - b) - 2(2a - 5b) =$

18. $(a - b) + (b - a) =$

19. $(a - b) - (b - a) =$

20. $-(2a - 1) - (3 - 4a) =$