

Order of Operations/Evaluation - Evaluation

Evaluate the following when $a = -2$, $b = 5$, and $c = 6$.

$$\begin{aligned} 1. \quad & 2a + b \\ & 2(-2) + 5 \\ & -4 + 5 \\ & \boxed{1} \end{aligned}$$

$$\begin{aligned} 2. \quad & -a - bc \\ & -(-2) - (5)(6) \\ & 2 - 30 \\ & \boxed{-28} \end{aligned}$$

$$\begin{aligned} 3. \quad & 2c - 5a \\ & 2(6) - 5(-2) \\ & 12 + 10 \\ & \boxed{22} \end{aligned}$$

$$\begin{aligned} 4. \quad & a^2 + b^2 \\ & (-2)^2 + (5)^2 \\ & 4 + 25 \\ & \boxed{29} \end{aligned}$$

$$\begin{aligned} 5. \quad & c^2 - a^2 \\ & (6)^2 - (-2)^2 \\ & 36 - 4 \\ & \boxed{32} \end{aligned}$$

$$\begin{aligned} 6. \quad & b^2 + ac - 3b \\ & (5)^2 + (-2)(6) - 3(5) \\ & 25 - 12 - 15 \\ & \boxed{-2} \end{aligned}$$

$$\begin{aligned} 7. \quad & ab^2 \\ & (-2)(5)^2 \\ & (-2)(25) \\ & \boxed{-50} \end{aligned}$$

$$\begin{aligned} 8. \quad & 3(c - a) \\ & 3[6 - (-2)] \\ & 3(6 + 2) \\ & 3(8) \\ & \boxed{24} \end{aligned}$$

$$\begin{aligned} 9. \quad & (a + b)^2 \\ & (-2 + 5)^2 \\ & (3)^2 \\ & \boxed{9} \end{aligned}$$

$$\begin{aligned} 10. \quad & b - ac^2 \\ & 5 - (-2)(6)^2 \\ & 5 - (-2)(36) \\ & 5 + 72 \\ & \boxed{77} \end{aligned}$$

Evaluate the following when $d = 3$, $e = -4$, $f = 1$, and $g = -5$.

$$\begin{aligned} 11. \quad & \frac{e^2 - 1}{g} \\ & \frac{(-4)^2 - 1}{-5} \\ & \frac{16 - 1}{-5} \\ & \frac{15}{-5} \\ & \boxed{-3} \end{aligned}$$

$$\begin{aligned} 12. \quad & d(f - 3e) + g \\ & 3[1 - 3(-4)] + (-5) \\ & 3(1 + 12) - 5 \\ & 3(13) - 5 \\ & 39 - 5 \\ & \boxed{34} \end{aligned}$$

$$\begin{aligned}
 13. \quad & de^2 + 11e \\
 & 3(-4)^2 + 11(-4) \\
 & 3(16) + (-44) \\
 & 48 - 44 \\
 & \boxed{4}
 \end{aligned}$$

$$\begin{aligned}
 14. \quad & -(g + 2d) - e \\
 & -[(-5) + 2(3)] - (-4) \\
 & -(-5 + 6) + 4 \\
 & -(1) + 4 \\
 & \boxed{3}
 \end{aligned}$$

$$\begin{aligned}
 15. \quad & d - e^2 \\
 & 3 - (-4)^2 \\
 & 3 - (16) \\
 & \boxed{-13}
 \end{aligned}$$

$$\begin{aligned}
 16. \quad & (f + d)^2 \\
 & (1 + 3)^2 \\
 & (4)^2 \\
 & \boxed{16}
 \end{aligned}$$

$$\begin{aligned}
 17. \quad & \frac{3e + 2d}{g + d} \\
 & \frac{3(-4) + 2(3)}{(-5) + 3} \\
 & \frac{-12 + 6}{-2} \\
 & \frac{-6}{-2} \\
 & \boxed{3}
 \end{aligned}$$

$$\begin{aligned}
 18. \quad & \frac{2g - d}{3e - f} \\
 & \frac{2(-5) - (3)}{3(-4) - (1)} \\
 & \frac{-10 - 3}{-12 - 1} \\
 & \frac{-13}{-13} \\
 & \boxed{1}
 \end{aligned}$$

$$\begin{aligned}
 19. \quad & \frac{\deg}{e^2 + 4f} \\
 & \frac{(3)(-4)(-5)}{(-4)^2 + 4(1)} \\
 & \frac{60}{16 + 4} \\
 & \frac{60}{20} \\
 & \boxed{3}
 \end{aligned}$$

$$\begin{aligned}
 20. \quad & \frac{g^2 - e^2}{g - e} \\
 & \frac{(-5)^2 - (-4)^2}{(-5) - (-4)} \\
 & \frac{25 - 16}{-5 + 4} \\
 & \frac{9}{-1} \\
 & \boxed{-9}
 \end{aligned}$$