



**Page 66-68**

SHOW WORK

**Questions :**

3,4,5,8,10,15,  
16, 19

## Page 66-68

3. Evaluate.

$$\begin{aligned} \text{a) } 3^2 + 1 \\ = 9 + 1 \\ = 10 \end{aligned}$$

$$\begin{aligned} \text{c) } (3 + 1)^2 \\ = (4)^2 \\ = 16 \end{aligned}$$

$$\begin{aligned} \text{e) } 2^2 + 4 \\ = 4 + 4 \\ = 8 \end{aligned}$$

$$\begin{aligned} \text{f) } 2^2 - 4 \\ = 4 - 4 \\ = 0 \end{aligned}$$

$$\begin{aligned} \text{h) } (2 - 4)^2 \\ = (-2)^2 \\ = 4 \end{aligned}$$

$$\begin{aligned} \text{j) } 2^2 - 4^2 \\ = 4 - 16 \\ = -12 \end{aligned}$$

4. Evaluate. Check using a calculator.

$$\begin{aligned} \text{a) } 2^3 \times 5 \\ = 8 \times 5 \\ = 40 \end{aligned}$$

$$\begin{aligned} \text{c) } (2 \times 5)^3 \\ = (10)^3 \\ = 1000 \end{aligned}$$

$$\begin{aligned} \text{e) } (-10)^3 \div 5 \\ = -1000 \div 5 \\ = -200 \end{aligned}$$

$$\begin{aligned} \text{d) } (2 \times 5)^2 \\ = (10)^2 \\ = 100 \end{aligned}$$

$$\begin{aligned} \text{f) } (-10) \div 5^0 \\ = -10 \div 1 \\ = -10 \end{aligned}$$

$$\begin{aligned} \text{g) } [(-10) \div 5]^3 \\ = (-2)^3 \\ = -8 \end{aligned}$$

$$\begin{aligned} \text{h) } [(-10) \div 5]^0 \\ = 1 \end{aligned}$$

5. Evaluate.

$$\text{b) } (2 - 3)^3$$

$$\text{d) } (2 + 3)^3$$

$$\text{e) } 2^3 \div (-1)^3$$

$$\text{f) } (2 \div 2)^3$$

$$\text{g) } 2^3 \times (-2)^3$$

$$\text{h) } (2 \times 1)^3$$

You do out first

$$\begin{aligned} & \underline{3^2 + 2^2 \times 2^4 + (-6)^2} \\ & 9 + 4 \times 16 + 36 \\ & 9 + 64 + 36 \\ & = 109 \end{aligned}$$

7. Identify, then correct, any errors in the student work below. Explain how you think the errors occurred.

$$\begin{aligned} & 3^2 + 2^2 \times 2^4 + (-6)^2 \\ & = 9 + 4 \times 16 - 36 \\ & = 12 \times 16 - 36 \\ & = 172 \end{aligned}$$

8. Use BEDMAS to evaluate. SHOW ALL WORK

$$\begin{aligned} \text{a) } & (7)(4) - (5)^2 \\ & = 28 - 25 \\ & = 3 \end{aligned}$$

$$\begin{aligned} \text{b) } & 6(2 - 5)^2 \\ & = 6(-3)^2 \\ & = 6(9) \\ & = 54 \end{aligned}$$

$$\begin{aligned} \text{c) } & (-3)^2 + (4)(7) \\ & = 9 + 28 \\ & = 37 \end{aligned}$$

$$\begin{aligned} \text{d) } & (-6) + 4^0 \times (-2) \\ & = (-6) + 1 \times (-2) \\ & = (-6) + (-2) \\ & = -8 \end{aligned}$$

$$\begin{aligned} \text{e) } & (2^2 \times 1^3)^2 \\ & = (4 \times 1)^2 \\ & = (4)^2 \\ & = 16 \end{aligned}$$

$$\begin{aligned} \text{f) } & [18 \div (-6)]^3 \times 2 \\ & = [-3]^3 \times 2 \\ & = -27 \times 2 \\ & = -54 \end{aligned}$$

10. Evaluate.

$$\begin{aligned} \text{a) } & (3 + 4)^2 \times (4 - 6)^3 \\ & = (7)^2 \times (-2)^3 \\ & = 49 \times -8 \\ & = -392 \end{aligned}$$

$$\begin{aligned} \text{b) } & (8 \div 2^2 + 1)^3 - 3^5 \\ & = (8 \div 4 + 1)^3 - 3^5 \\ & = (2+1)^3 - 3^5 \\ & = (3)^3 - 3^5 \\ & = 27 - 243 \\ & = -216 \end{aligned}$$

$$\begin{aligned} \text{c) } & 4^3 \div [8(6^0 - 2^1)] \\ & = 64 \div [8(1-2)] \\ & = 64 \div [8(-1)] \\ & = 64 \div -8 \\ & = -8 \end{aligned}$$

$$\begin{aligned} \text{d) } & 9^2 \div [9 \div (-3)]^2 \\ & = 9^2 \div [-3]^2 \\ & = 81 \div 9 \\ & = 9 \end{aligned}$$

$$\begin{aligned} \text{e) } & (2^2 \times 1^3)^2 \\ & = (4 \times 1)^2 \\ & = 4^2 \\ & = 16 \end{aligned}$$

$$\begin{aligned} \text{f) } & (11^3 + 5^2)^0 + (4^2 - 2^4) \\ & = (1) + (16-16) \\ & = 1 + 0 \\ & = 1 \end{aligned}$$

15. This student got the correct answer, but she did not earn full marks. Find the mistake this student made. Explain how it is possible she got the correct answer. Write a more efficient solution for this problem.

$\begin{aligned} & -(24 - 3 \times 4^2)^0 \div (-2)^3 \\ & = -(24 - 12^2)^0 \div (-8) \\ & = -(24 - 144)^0 \div (-8) \\ & = -(-120)^0 \div (-8) \\ & = -1 \div (-8) \\ & = \frac{1}{8} \end{aligned}$	$\begin{aligned} & -(24 - 3 \times 4^2)^0 \div (-2)^3 \\ & = -(1) \div (-8) \\ & = \frac{-1}{-8} \\ & = \frac{1}{8} \end{aligned}$
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16. USE BEDMAS to evaluate. SHOW ALL WORK

$$\begin{aligned}
 \text{a) } & (14 + 10)^2 \times (21 - 28)^3 \\
 & = (24)^2 \times (-7)^3 \\
 & = 576 \times (-343) \\
 & = 197\ 568
 \end{aligned}$$

$$\begin{aligned}
 \text{b) } & (36 \div 2^2 + 11)^3 - 10^5 \\
 & (36 \div 4 + 11)^3 - 10^5 \\
 & (9 + 11)^3 - 10^5 \\
 & (20)^3 - 10^5 \\
 & 8000 - 100\ 000 \\
 & = -92000
 \end{aligned}$$

$$\text{c) } \frac{12^3}{36(12^0 - 13^1)}$$

$$\text{Top: } 12^3 = 1728$$

$$\begin{aligned}
 \text{Bottom: } & 36(12^0 - 13^1) \\
 & 36(1 - 13) \\
 & 36(-12) \\
 & = -432
 \end{aligned}$$

$$\frac{\text{Top}}{\text{Bottom}} = \frac{1728}{-432} = -4$$

$$\text{d) } \frac{81^2}{9^2 + (-9)^2}$$

$$\text{Top: } 81^2 = 6561$$

$$\begin{aligned}
 \text{Bottom: } & 9^2 + (-9)^2 \\
 & = 81 + 81 \\
 & = 162
 \end{aligned}$$

$$\frac{\text{Top}}{\text{Bottom}} = \frac{6561}{162} = \frac{81}{2} = 40.5$$

$$\begin{aligned}\text{e) } & (14^2 + 6^3)^2 \\ & = (196 + 216)^2 \\ & = (412)^2 \\ & = 169\,744\end{aligned}$$

$$\begin{aligned}\text{f) } & (11^3 + 25^2)^0 + (27^2 - 33^4) \\ & \quad | \quad + (729 - 1185\,921) \\ & \quad | \quad + (-1\,185\,192) \\ & = -1\,185\,191\end{aligned}$$



$$19) \frac{10 \times 130}{25} + 25^3 \div 10^6 \times 14 \times 150$$

$$52 + 15625 - 1000\ 000 \times 14 \times 150$$


$$52 + 32.8125$$

$$84.8125$$