

Order of Operations and Evaluating Expressions Bell Work

Evaluate the expression for the given value of the variable.

1. $x^4 - 3$ when $x = 2$

2. $3 + 2x^3$ when $x = 2$

3. $a^3 + 10a$ when $a = 3$

4. $6 \cdot 2p^2 + 8$ when $p = 5$

5. $\frac{22}{x} \div 2 + 16$ when $x = 11$

6. $13 + 3b$ when $b = 7$

7. $(x - 5) \div 4$ when $x = 9$

8. $\frac{x}{7} + 16$ when $x = 14$

9. $5 \cdot 6y$ when $y = 5$

10. $\frac{4}{5} \div n + 13$ when $n = \frac{1}{5}$

11. $\frac{16}{x} - 2$ when $x = 4$

12. $y^4 \div 8$ when $y = 4$

Evaluate the expression for the given value of the variable.

13. $\frac{9 \cdot 2}{4 + x^2 - 1}$ when $x = 3$

14. $\frac{13y - 4}{18 - y^2 + 1}$ when $y = 4$

15. $\frac{2z^3 - 18}{1 + s^2 - 8}$ when $z = 5$ and $s = 6$

Order of Operations and Evaluating Expressions Bell Work

ANSWER

Evaluate the expression for the given value of the variable.

$$\begin{aligned} 1. \quad x^4 - 3 \text{ when } x = 2 \\ &= 2^4 - 3 \\ &= 16 - 3 \\ &= 13 \end{aligned}$$

$$\begin{aligned} 2. \quad 3 + 2x^3 \text{ when } x = 2 \\ &= 3 + 2 \cdot 2^3 \\ &= 3 + 2 \cdot 8 \\ &= 3 + 16 \\ &= 19 \end{aligned}$$

$$\begin{aligned} 3. \quad a^3 + 10a \text{ when } a = 3 \\ &= 3^3 + 10 \cdot 3 \\ &= 27 + 30 \\ &= 57 \end{aligned}$$

$$\begin{aligned} 4. \quad 6 \cdot 2p^2 + 8 \text{ when } p = 5 \\ &= 6 \cdot 2 \cdot 5^2 + 8 \\ &= 12 \cdot 25 + 8 \\ &= 300 + 8 \\ &= 308 \end{aligned}$$

$$\begin{aligned} 5. \quad \frac{22}{x} \div 2 + 16 \text{ when } x = 11 \\ &= \frac{22}{11} \div 2 + 16 \\ &= 2 \div 2 + 16 \\ &= \frac{2}{2} + 16 \\ &= 1 + 16 \\ &= 17 \end{aligned}$$

$$\begin{aligned} 6. \quad 13 + 3b \text{ when } b = 7 \\ &= 13 + 3(7) \\ &= 13 + 21 \\ &= 34 \end{aligned}$$

$$\begin{aligned} 7. \quad (x - 5) \div 4 \text{ when } x = 9 \\ &= (9 - 5) \div 4 \\ &= 4 \div 4 \\ &= \frac{4}{4} \\ &= 1 \end{aligned}$$

$$\begin{aligned} 8. \quad \frac{x}{7} + 16 \text{ when } x = 14 \\ &= \frac{14}{7} + 16 \\ &= 2 + 16 \\ &= 18 \end{aligned}$$

$$\begin{aligned} 9. \quad 5 \cdot 6y \text{ when } y = 5 \\ &= 5 \cdot 6 \cdot 5 \end{aligned}$$

$$10. \quad \frac{4}{5} \div n + 13 \text{ when } n = \frac{1}{5}$$

Order of Operations and Evaluating Expressions Bell Work

$$= 30 \cdot 5$$

$$= 150$$

$$= \frac{4}{5} \div \frac{1}{5} + 13$$

$$= \frac{4}{5} \cdot \frac{5}{1} + 13$$

$$= 4 + 13$$

$$= 17$$

$$11. \quad \frac{16}{x} - 2 \text{ when } x = 4$$

$$= \frac{16}{4} - 2$$

$$= 4 - 2$$

$$= 2$$

$$12. \quad y^4 \div 8 \text{ when } y = 4$$

$$= 4^4 \div 8$$

$$= 256 \div 8$$

$$= \frac{256}{8}$$

$$= 32$$

Evaluate the expression for the given value of the variable.

$$13. \quad \frac{9 \cdot 2}{4 + x^2 - 1} \text{ when } x = 3$$

$$= \frac{18}{4 + 3^2 - 1}$$

$$= \frac{18}{3 + 9}$$

$$= \frac{18}{12}$$

$$= \frac{3}{2}$$

$$14. \quad \frac{13y - 4}{18 - y^2 + 1} \text{ when } y = 4$$

$$= \frac{13 \cdot 4 - 4}{18 - 4^2 + 1}$$

$$= \frac{52 - 4}{19 - 16}$$

$$= \frac{48}{3}$$

$$= 16$$

$$15. \quad \frac{2z^3 - 18}{1 + s^2 - 8} \text{ when } z = 5 \text{ and } s = 6$$

$$= \frac{2 \cdot 5^3 - 18}{1 + 6^2 - 8}$$

$$= \frac{2 \cdot 125 - 18}{36 - 8}$$

$$= \frac{250 - 18}{29}$$

$$= \frac{232}{29}$$

$$= 8$$