

Order of Operations and Evaluating Expressions Assignment

Evaluate the expression for the given value of the variable.

1. $\frac{16}{n} + 2^3 - 10$ when $n = 8$

2. $r^5 - 12 \div r$ when $r = 3$

3. $b + 6 \div 4$ when $b = 1.5$

4. $3r^2 - 17$ when $r = 6$

5. $27 - \frac{24}{b}$ when $b = 8$

6. $\frac{9}{10} \cdot y - \frac{3}{10}$ when $y = \frac{1}{2}$

7. $2 \cdot x^3 + 4$ when $x = 3$

8. $8a$ when $a = 4$

9. $\frac{4}{3} \cdot x$ when $x = \frac{1}{6}$

10. $\frac{24}{x}$ when $x = 3$

11. $\frac{5}{16} - p$ when $p = \frac{3}{8}$

12. $(6w)^2$ when $w = 5$

13. $5s^2$ when $s = 16$

14. $4(t^3)$ when $t = 3$

15. $(7x)^3$ when $x = 2$

Name: _____ Period: _____ Date: _____

Order of Operations and Evaluating Expressions Assignment

Evaluate the expression for the given value of the variable.

16. $\frac{r^2 - 3}{4r}$ when $r = 3$

17. $\frac{6x - 3}{7 + (x^3 - 1)}$ when $x = 1$

18. $\frac{(9 - x)^2 + 4}{5}$ when $x = 3$

19. $\frac{y^5 - 12}{y(z^2 - 5)}$ when $y = 2$ and $z = 5$

20. $\frac{2(17 + 2x)}{y^2 - 11}$ when $x = 4$ and $y = 6$

Order of Operations and Evaluating Expressions Assignment

ANSWER

Evaluate the expression for the given value of the variable.

$$\begin{aligned} 1. \quad & \frac{16}{n} + 2^3 - 10 \text{ when } n = 8 \\ & = \frac{16}{8} + 2^3 - 10 \\ & = 2 + 8 - 10 \\ & = 10 - 10 \\ & = 0 \end{aligned}$$

$$\begin{aligned} 2. \quad & r^5 - 12 \div r \text{ when } r = 3 \\ & = 3^5 - 12 \div 3 \\ & = 243 - \frac{12}{3} \\ & = 243 - 4 \\ & = 239 \end{aligned}$$

$$\begin{aligned} 3. \quad & b + 6 \div 4 \text{ when } b = 1.5 \\ & = 1.5 + 6 \div 4 \\ & = 1.5 + \frac{6}{4} \\ & = 1.5 + 1.5 \\ & = 3 \end{aligned}$$

$$\begin{aligned} 4. \quad & 3r^2 - 17 \text{ when } r = 6 \\ & = 3 \cdot 6^2 - 17 \\ & = 3 \cdot 36 - 17 \\ & = 108 - 17 \\ & = 91 \end{aligned}$$

$$\begin{aligned} 5. \quad & 27 - \frac{24}{b} \text{ when } b = 8 \\ & = 27 - \frac{24}{8} \\ & = 27 - 3 \\ & = 24 \end{aligned}$$

$$\begin{aligned} 6. \quad & \frac{9}{10} \cdot y - \frac{3}{10} \text{ when } y = \frac{1}{2} \\ & = \frac{9}{10} \cdot \frac{1}{2} - \frac{3}{10} \\ & = \frac{9}{20} - \frac{3}{10} \\ & = \frac{9}{20} - \frac{6}{20} \\ & = \frac{3}{20} \end{aligned}$$

$$\begin{aligned} 7. \quad & 2 \cdot x^3 + 4 \text{ when } x = 3 \\ & = 2 \cdot 3^3 + 4 \\ & = 2 \cdot 27 + 4 \\ & = 54 + 4 \\ & = 58 \end{aligned}$$

$$\begin{aligned} 8. \quad & 8a \text{ when } a = 4 \\ & = 8 \cdot 4 \\ & = 32 \end{aligned}$$

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$$\begin{aligned} 9. \quad & \frac{4}{3} \cdot x \text{ when } x = \frac{1}{6} \\ & = \frac{4}{3} \cdot \frac{1}{6} \\ & = \frac{4}{18} \\ & = \frac{2}{9} \end{aligned}$$

$$\begin{aligned} 10. \quad & \frac{24}{x} \text{ when } x = 3 \\ & = \frac{24}{3} \\ & = 8 \end{aligned}$$

$$\begin{aligned} 11. \quad & \frac{5}{16} - p \text{ when } p = \frac{3}{8} \\ & = \frac{5}{16} - \frac{3}{8} \\ & = \frac{5}{16} - \frac{6}{16} \\ & = -\frac{1}{16} \end{aligned}$$

$$\begin{aligned} 12. \quad & (6w)^2 \text{ when } w = 5 \\ & = (6 \cdot 5)^2 \\ & = 30^2 \\ & = 900 \end{aligned}$$

$$\begin{aligned} 13. \quad & 5s^2 \text{ when } s = 16 \\ & = 5 \cdot 16^2 \\ & = 5 \cdot 256 \\ & = 1280 \end{aligned}$$

$$\begin{aligned} 14. \quad & 4(t^3) \text{ when } t = 3 \\ & = 4(3^3) \\ & = 4(27) \\ & = 108 \end{aligned}$$

$$\begin{aligned} 15. \quad & (7x)^3 \text{ when } x = 2 \\ & = (7 \cdot 2)^3 \\ & = 14^3 \\ & = 2744 \end{aligned}$$

Order of Operations and Evaluating Expressions Assignment

Evaluate the expression for the given value of the variable.

16. $\frac{r^2 - 3}{4r}$ when $r = 3$

$$= \frac{3^2 - 3}{4(3)}$$

$$= \frac{9 - 3}{12}$$

$$= \frac{6}{12}$$

$$= \frac{1}{2}$$

17. $\frac{6x - 3}{7 + (x^3 - 1)}$ when $x = 1$

$$= \frac{6 \cdot 1 - 3}{7 + (1^3 - 1)}$$

$$= \frac{6 - 3}{7 + (1 - 1)}$$

$$= \frac{3}{7}$$

18. $\frac{(9 - x)^2 + 4}{5}$ when $x = 3$

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

$$= \frac{6^2 + 4}{5}$$

$$= \frac{36 + 4}{5}$$

$$= \frac{40}{5}$$

$$= 8$$

19. $\frac{y^5 - 12}{y(z^2 - 5)}$ when $y = 2$ and $z = 5$

$$= \frac{2^5 - 12}{2(5^2 - 5)}$$

$$= \frac{32 - 12}{2(25 - 5)}$$

$$= \frac{20}{2(20)}$$

$$= \frac{1}{2}$$

20. $\frac{2(17 + 2x)}{y^2 - 11}$ when $x = 4$ and $y = 6$

$$= \frac{2(17 + 2(4))}{6^2 - 11}$$

$$= \frac{2(17 + 8)}{36 - 11}$$

$$= \frac{3(25)}{25}$$

$$= 3$$