

Name: _____ Period: _____ Date: _____

Zero and Negative Exponents Assignment

Evaluate the following

1. 2^0

2. -2^0

3. $-4^{(-2)} \div 2^{(-1)}$

4. $2x^{-1}$

5. $\frac{(2^{-1}3^{-1})}{(2^{-1}-3^{-1})}$

6. $\left(\frac{2}{3}\right)^{-4}$

7. $4a^{(-2)}$

8. $(2x)^0 - 2x^0$

9. $5a^{-2}b$

10. $\left(\frac{-4x^0}{7}\right)^3$

Simplify the following without zero or negative Exponent.

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11. $a^{-2} + 3$

12. $x^{-1} - y^{-1}$

13. $2^{-3} + x$

14. $-3^{-2} - 3^{-1}$

15. $g^{-2} + g^0 - 3^0$

16. $3a^{-2} + b^0 - 2$

17. $-2^{-1} - 2^0 - 2^{-2}$

18. $\left(\frac{1}{7}\right)^{-2} - 7^{-2}$

19. $-5^{-1} - \frac{1}{5^{-1}}$

20. $\frac{a^{-2}}{b - 2^{-3}}$

Answer:

Zero and Negative Exponents Assignment

Evaluate the following

1. $2^0 = 1$

3. $-4^{(-2)} \div 2^{(-1)} = \frac{-1}{16} \times 2 = -\frac{1}{8}$

5. $\frac{(2^{-1}3^{-1})}{(2^{-1}-3^{-1})} = \frac{\frac{1}{6}}{\frac{1}{2}-\frac{1}{3}} = 1$

7. $4a^{(-2)} = \frac{4}{a^2}$

9. $5a^{-2}b = \frac{5b}{a^2}$

2. $-2^0 = -1$

4. $2x^{-1} = \frac{2}{x}$

6. $\left(\frac{2}{3}\right)^{-4} = \left(\frac{3}{2}\right)^4 = \frac{81}{16}$

8. $(2x)^0 - 2x^0 = 1 - 2 = -1$

10. $\left(\frac{-4x^0}{7}\right)^3 = \frac{-64}{343}$

Simplify the following without zero or negative Exponent.

11. $a^{-2} + 3 = \frac{1}{a^2} + 3 = \frac{1+3a^2}{a^2}$

13. $2^{-3} + x = \frac{1}{2^3} + x = \frac{1+8x}{8}$

15. $g^{-2} + g^0 - 3^0 = \frac{1}{g^2} + 1 - 1 = \frac{1}{g^2}$

17. $-2^{-1} - 2^0 - 2^{-2} = -\frac{1}{2} - 1 - \frac{1}{4} = \frac{-2-4-1}{4} = -\frac{7}{4}$

19. $-5^{-1} - \frac{1}{5^{-1}} = -\frac{1}{5} - 5 = \frac{-1-25}{5} = -\frac{26}{5}$

12. $x^{-1} - y^{-1} = \frac{1}{x} - \frac{1}{y} = \frac{y-x}{xy}$

14. $-3^{-2} - 3^{-1} = -\frac{1}{9} - \frac{1}{3} = -\frac{4}{9}$

16. $3a^{-2} + b^0 - 2 = \frac{3}{a^2} + 1 - 2 = \frac{3}{a^2} - 1 = \frac{3-a^2}{a^2}$

18. $\left(\frac{1}{7}\right)^{-2} - 7^{-2} = 7^2 - \frac{1}{7^2} = 49 - \frac{1}{49} = \frac{2401-1}{49} = \frac{2400}{49}$

20. $\frac{a^{-2}}{b-2^{-3}} = \frac{\frac{1}{a^2}}{b-\frac{1}{2^3}} = \frac{\frac{1}{a^2}}{\frac{8b-1}{8}} = \frac{1}{a^2} \times \frac{8}{8b-1} = \frac{8}{8ba^2-a}$