

Unit 3 Review

April.18th, 2016

3-1 Write in expanded form and evaluate.

$$\begin{aligned} 1) -8^2 \\ = -8 \cdot 8 \\ = -64 \end{aligned}$$

$$\begin{aligned} 2) (-4)^4 \\ = (-4)(-4)(-4)(-4) \\ = 256 \end{aligned}$$

$$\begin{aligned} 3) \text{ Evaluate } 2^3 - 3^2 - (-1)^{21} \\ = 8 - 9 + 1 \\ = 0 \end{aligned}$$

$$\begin{aligned} 4) (0.5)^3 \\ = \left(\frac{1}{2}\right)^3 \\ = \frac{1}{8} \end{aligned}$$

$$\begin{aligned} 3-2 \ 5) \frac{3^2 \cdot 3^5}{3 \cdot 3^3} \\ = \frac{3^7}{3^4} \\ = 3^3 \end{aligned}$$

$$\begin{aligned} 6) \frac{(-4)^5 (-4)^2}{(-4)^3} \\ = \frac{(-4)^7}{(-4)^3} \\ = (-4)^4 \\ = 4^4 \end{aligned}$$

$$\begin{aligned} 3-3 \ 7) (x^3)^5 \\ = x^{15} \end{aligned}$$

$$\begin{aligned} 8) \frac{(3^2)^3 \cdot (3^4)^5}{(3^5)^2} \\ = \frac{3^6 \cdot 3^{20}}{3^{10}} \\ = \frac{3^{26}}{3^{10}} \\ = 3^{16} \end{aligned}$$

$$\begin{aligned} 9) \frac{(32x)^3 (256x^3)^2}{(128x^4)^3} \\ = \frac{(2^5x)^3 (2^8x^3)^2}{(2^7x^4)^3} \\ = \frac{2^{15}x^3 \cdot 2^{16}x^6}{2^{21}x^{12}} \\ = \frac{2^{31}x^9}{2^{21}x^{12}} \\ = \frac{2^{10}}{x^3} \end{aligned}$$

$$3-4 \quad 10) (15x^3y^7z^{a+b})^0$$

$= 1$

$$11) 15x^0$$

$= 15$

$$12) -5^0$$

$= -1$

$$13) 2^{-3}$$

$= \frac{1}{2^3}$

$$14) -5^{-2}$$

$= -\frac{1}{5^2} = -\frac{1}{25}$

$$15) (-3)^{-4}$$

$= \frac{1}{(-3)^4} = \frac{1}{81}$

$$16) (2^5)^{-2} (2^{-3})^{-3}$$

$= 2^{-10} \cdot 2^6$
 $= 2^{-4}$
 $= \frac{1}{2^4} \quad \text{or} \quad \frac{1}{16}$

$$17) \frac{1}{x^{-5}} \cdot x^{-10}$$

$= \frac{x^{-10}}{x^{-5}}$
 $= x^{-5}$
 $= \frac{1}{x^5}$

Exponents Practice