

Name

7.3

Define and Use Zero

Alg I

and Negative Exponents

I can use zero and negative exponents.

$$\begin{aligned} * a^0 &= 1 & 5^0 &= 1 \\ * a^{-n} &= \frac{1}{a^n} & 2^{-1} &= \frac{1}{2^1} = \frac{1}{2} \\ * a^n &= \frac{1}{a^{-n}} & 2 &= \frac{1}{2^{-1}} \end{aligned}$$

Example 1:

Ch. 7

Quiz

$$1) \left(\frac{2}{3}\right)^0 = 1$$

$$3) \frac{1}{2^{-3}} = 2^3 = 2 \cdot 2 \cdot 2 = 8$$

$$2) (-8)^{-2} = \frac{1}{(-8)^2} = \frac{1}{64}$$

$$4) (-1)^0 = 1$$

Example 2:

$$5) \frac{1}{4^{-3}} = 4^3 = 4 \cdot 4 \cdot 4 = 64$$

$$6) (-5^{-3})^{-1} = \frac{1}{(-5)^{-3}} = 5^3 = 5 \cdot 5 \cdot 5 = 125$$

$$7) (-3)^5 \cdot (-3)^{-5} = (-3)^{5+(-5)} = (-3)^0 = 1$$

$$8) \frac{6^{-2}}{6^2} = 6^{-2-2} = 6^{-4} = \frac{1}{6^4} = \frac{1}{1,296}$$

$$6^4 = 6 \cdot 6 \cdot 6 \cdot 6 = 1,296$$

Example 3:

$$9) \frac{3x^1y^{-3}}{3^0x^3y^0} = \frac{1x^1 \cdot 3y^{-3-1}}{3} = \frac{1x^{-2}y^{-4}}{3} = \frac{1}{3x^2y^4}$$

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Example 4

$$10) 10^4 \cdot 10^{-27} = 10^{4+(-27)} = 10^{-23}$$

Ch. 7 Quiz

* Complete Skills practice pg. 452, #