

Skill check

$$\textcircled{1} \frac{5^{12} \cdot c^{10} \cdot d^2}{5^9 \cdot c^9}$$

10-4 Zero and negative exponents

Vocabulary:

1.) Zero exponents

For any nonzero number zero power is undefined = 1

$$4^0 = 1 \quad a^0 = 1$$

2.) Negative exponents

For any integers n and any nonzero number a to a negative power is the reciprocal

$$4^{-2} = \frac{1}{4^2} \quad a^{-n} = \frac{1}{a^n}$$

Example 1:
Evaluating expressions

① 3^{-4}

② $(-8.5)^{-4} \cdot (-8.5)^4$

③ $\frac{2^6}{2^8}$

Example 2
Simplifying expressions

1.) $-5x^0$

2.) $\frac{9y^{-3}}{y^5}$

Practice

$$\textcircled{1} 6y^{-4}$$

$$\textcircled{2} 3d^{-4} \cdot 4d^4$$

$$\textcircled{3} \frac{3^{-2} \cdot k^0 \cdot w^0}{w^{-6}}$$

