

**Intermediate Algebra**  
**Skill-Builder # AE - 4**  
**Applying the Zero Exponent Rule**

Following is the zero exponent rule:

$$a^0 = 1 \quad (6)$$

Examples

1.  $5^0 = 1$

2.  $(5y)^0 = 1$

3.  $5y^0 = 5 \cdot 1 = 5$

4.  $-5^0 y = -1 \cdot y = -y$

5.  $-(-5y)^0 = -1$

6.  $-5^0 - y^0 = -1 - 1 = -2$

7.  $\frac{4a^0 b}{(xyz)^0} = \frac{4 \cdot 1 \cdot b}{1} = 4b$

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Simplify.

1.  $7^0$

2.  $(-4)^0$

3.  $\frac{1}{9^0}$

4.  $-\frac{3^0}{9}$

5.  $-(-x)^0$

6.  $-\left(-\frac{1}{2}\right)^0$

7.  $3n^0$

8.  $(3n)^0$

9.  $3^0 n$

10.  $(-3n)^0 - 3n^0$

11.  $\frac{5y^0 z^2}{4^0 w^3}$

12.  $\frac{-6^0 x^2 y^0}{3x^0 yz^0}$

13.  $\left(\frac{12ab^3}{c^5 d^{15}}\right)^0$

14.  $\left(-\frac{30n^3 m^5}{4p^5 w}\right)^0$

15.  $\frac{2a(3ab^2)^0}{3b(2a^2b)^0 c^4}$

16.  $4\left(\frac{r^3 s^6}{2rs^2}\right)^0 - \left(-\frac{2s}{5r^{10}}\right)^0$

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**Answers**

1. 1

2. 1

3. 1

4.  $-1/9$

5.  $-1$

6.  $-1$

7. 3

8. 1

9.  $n$

10.  $-2$

11.  $5z^2/w^3$

12.  $-x^2/3y$

13. 1

14. 1

15.  $2a/3bc^4$

16. 3

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