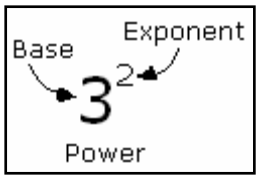
CHAPTER 3 Polynomials
3.2 Work With Exponents
Evaluating Expressions Containing Exponents



Example:

a) Evaluate the expression $(7-5)^4\left(\frac{1}{2}\right)^3$.

b) Evaluate the expression $x^3 - 9x^2 + 27x - 27$ for $x = 3$.

Solution:

a) $(7-5)^4\left(\frac{1}{2}\right)^3 = 2^4 \times \frac{1^3}{2^3}$

$= 16 \times \frac{1}{8}$

$= \overset{2}{\cancel{16}} \times \frac{1}{\cancel{8}_{1}}$

$= 2$

b) $x^3 - 9x^2 + 27x - 27 = (3)^3 - 9(3)^2 + 27(3) - 27$

$= 27 - 81 + 81 - 27$

$= 0$

Practice:

1. Evaluate the expression $3^2 - 2^3 + 1^4$.

2. Evaluate the expression $a^4 - b^2$ for $a = 2$ and $b = 4$.

Answers:

1. 2 **2.** 0