

10.1 Exponents

Review – Parts of an Exponent

$$\underline{\hspace{2cm}} \quad 4^3 \quad \underline{\hspace{2cm}}$$

$$\underline{\hspace{2cm}}$$

Example 1

Write each product using exponents

1) $5 \bullet 5 \bullet 5$

2) $m \bullet m \bullet m \bullet m \bullet m \bullet m$

3) $a \bullet b \bullet b \bullet a \bullet b$

4) $-4 \bullet -4 \bullet -4$

5) $\frac{1}{2} \bullet \frac{1}{2} \bullet \frac{1}{2} \bullet \frac{1}{2}$

On Your Own

Write each product using exponents

6) $(-7)(-7)(-7)$

7) $\pi \bullet \pi \bullet r \bullet r \bullet r$

8) $\frac{1}{4} \bullet \frac{1}{4} \bullet \frac{1}{4} \bullet \frac{1}{4} \bullet \frac{1}{4}$

9) $0.3 \bullet 0.3 \bullet 0.3 \bullet x \bullet x$

Review – Order of Operations

Parenthesis

Exponents / Roots

Multiplication

Division

Addition

Subtraction

Practice

Simplify the following

10) $9 + 6 \times 4 - 7$

11) $24 \div (3 \bullet 5 - 7)$

P **E** **M** **D** **A** **S**
Left → Right Left → Right

12) $(4 - 2)^3 - 5$

13) $8 + 2 \times 9^2$

P **E** **M** **D** **A** **S**
Left → Right Left → Right

14) $6 + 2^3 \div 8$

15) $100 - 5^2 \times 4$

Important!!

$$(-4)^2 \text{ vs } -4^2$$

Evaluation each expression

$$16) -2^4$$

$$17) (-2)^4$$

On Your Own

Evaluation each expression

$$18) 3 + 2 \bullet 3^4$$

$$19) 3^3 - 8^2 \div 2$$

On Your Own

Evaluation each expression

$$20) -5^4$$

$$21) \left(-\frac{1}{6}\right)^3$$

$$22) \left| -3^3 \div 9 \right|$$

Evaluating with negative numbers

Evaluate x^3 if $x = -2$