

# Warm-Up

October 10, 2017

Repeated multiplication	Base	Power	Evaluate
A. $-6 \times -6 \times -6$	$-6$	$(-6)^3$ ← odd	$-216$
B. $-(-2)(-2)(-2)$	$-2$	$-(-2)^3$	$8$
C. $-1 \times 1 \times 1 \times 1$	$1$	$-1^4$	$-1$

2. Write as a repeated multiplication and evaluate

A.  $-(-5)^4$   $-625$   
 $-(-5 \times -5 \times -5 \times -5)$

B.  $-3^6$   $-729$   
 $-3 \times 3 \times 3 \times 3 \times 3 \times 3$

C.  $(-4)^3$   
 $-4 \times -4 \times -4 = -64$

3. Write the following as a power: 64

$4^3 = 64$

$8^2 = 64$

4. Write as a repeated multiplication and evaluate

$-(-5)^2$   $-25$   
 $-(-5 \times -5)$



**Section 2.2**  
**Powers of Ten and**  
**Zero Exponents**



## Zero Exponent Law

(positive/negative)

A power with an integer base, other than 0, and an exponent of 0 is equal to 1

Power	Base	Evaluate
a) $-5^0$	5	-1
b) $(-2)^0$	-2	1
c) $-(-62)^0$	-62	-1
d) $-(5)^0$	5	-1

Write each of the following using a base of 10:

A. 100 000

$$10^5 \leftarrow \text{exponent} = \# \text{ of zeros}$$

B. 1 000 000 000

$$10^9$$

C. 1

$$10^0$$

D. 100

$$10^2$$

E. 10

$$10^1$$

three thousand two hundred sixty two

standard  
form

3 262

Expanded  
form

$3000+200+60+2$

$3 \times 1000 + 2 \times 100 + 6 \times 10 + 2 \times 1$

Power of  
10

$3 \times 10^3 + 2 \times 10^2 + 6 \times 10^1 + 2 \times 10^0$

Write 125 628 as a power of 10

Expanded form

$$100000 + 20000 + 5000 + 600 + 20 + 8$$

Power of  
10

$$1 \times 10^5 + 2 \times 10^4 + 5 \times 10^3 + 6 \times 10^2 + 2 \times 10^1 + 8 \times 10^0$$

# 40 203

Expanded  
form  
first

$$40000 + 200 + 3$$

$$4 \times 10^4 + 0 \times 10^3 + 2 \times 10^2 + 0 \times 10^1 + 3 \times 10^0$$

$$4 \times 10^4 + 2 \times 10^2 + 3 \times 10^0$$

Power of  
10



**Write in standard form**

**[ALWAYS LOOK AT THE BASE 10 AND  
START WITH THE HIGHEST  
EXPONENT!]**

$$3 \times 10^2 + 6 \times 10^4 + 3 \times 10^0 + 8 \times 10^6$$

$$8 \times 10^6 + 6 \times 10^4 + 3 \times 10^2 + 3 \times 10^0$$

$$8060303$$

$$8060303$$

# Evaluate

a)  $-(-5)^0$

-1

b)  $-326^0$

-1

c)  $(-5)^0$

1

# Homework

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#4, 5 > chart  
power | Evaluate

6, 8, 9[a,c,e], 10 all

↓  
 $10^5 = 100\,000$