

## Warm-Up

October 3, 2017

1. What are the two parts of a power?

power }  $3 \leftarrow$  exponent  
 $2 \leftarrow$  Base

2. Write  $5^6$  as a repeated multiplication and evaluate.

3.  $5 \times 5 \times 5 \times 5 \times 5 \times 5 = 15625$  Standard form

Power	Base	Exponent	Repeated Multiplication	Evaluate value
$5^4$	5	4	$5 \times 5 \times 5 \times 5$	625
$6^3$	6	3	$6 \times 6 \times 6$	216

\* What if a power has a negative sign? \*

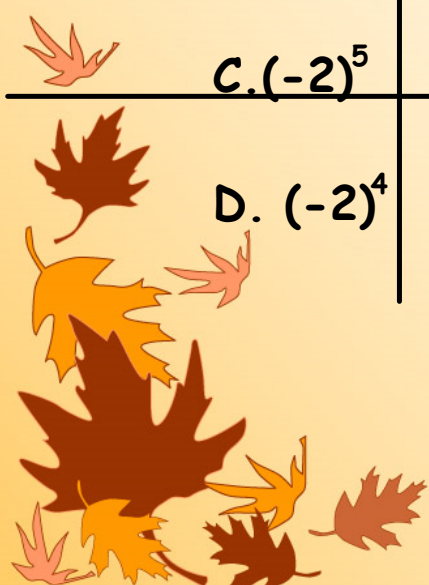
	A. $(-3)^4$	B. $-3^4$	C. $-(-3)^4$	D. $-(3)^4$
Base	-3	3	-3	3
Repeated multiplication	$-3 \times -3 \times -3 \times -3$	$-(3 \times 3 \times 3 \times 3)$	$-(-3 \times -3 \times -3 \times -3)$	$-(3 \times 3 \times 3 \times 3)$
Evaluate	81	-81	-81	-81

NEVER USE YOUR CALCULATOR TO DETERMINE THE SIGN OF THE ANSWER!!

Fill in the chart below



	Base	Repeated multiplication	Evaluate
A. $4^5$	4	$4 \times 4 \times 4 \times 4 \times 4$	1024
B. $-2^5$	2	$-(2 \times 2 \times 2 \times 2 \times 2)$	-32
C. $(-2)^5$	-2	$-2 \times -2 \times -2 \times -2 \times -2$	-32
D. $(-2)^4$	-2	$-2 \times -2 \times -2 \times -2$	16



Evaluate The following:

Standard Form.

A.  $10^5$

$10 \times 10 \times 10 \times 10 \times 10$

100 000

B.  $(-5)^3$

negative base  
odd exponent

-125

D.  $(-3)^2$

base (-) ← even

9

$-3 \times -3$

C.  $-(2.3)^6$

(-) (+)

-148.04



Predict whether the final answer will be positive or negative:

a.  $(-2)^3$

answer  
(-)

← base (-)  
← odd

B.  $-(2)^4$

Negative

(-) (+)

C.  $-(-3)^4$

negative

(-)(+)

← negative  
← even

D.  $-3^3$

negative



Explain why  $3^4$  and  $4^3$  are not the same.

$$3 \times 3 \times 3 \times 3 = 81$$

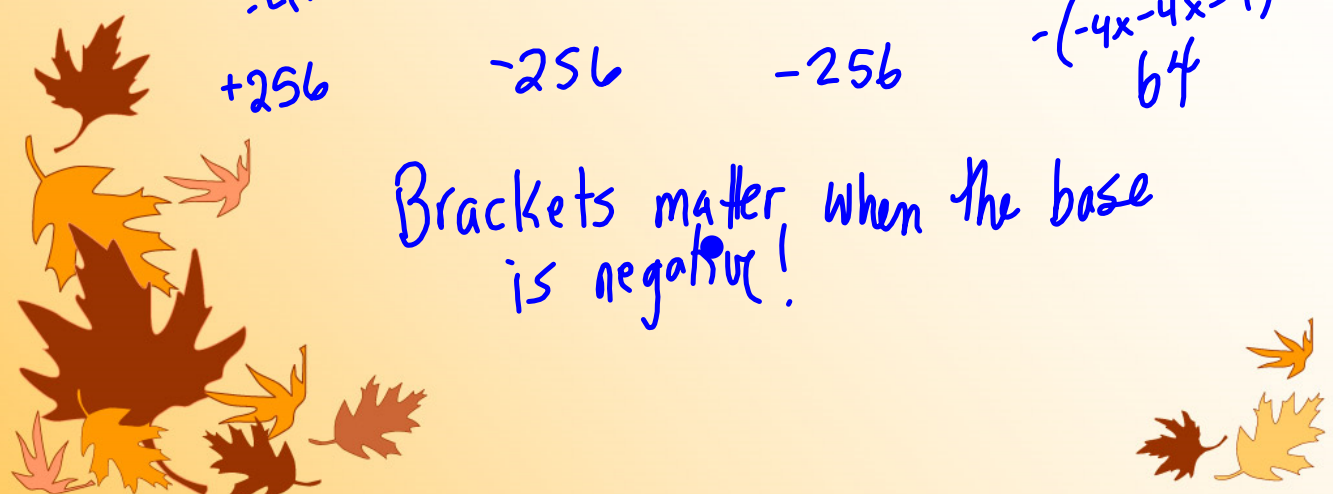
$$4 \times 4 \times 4 = 64$$

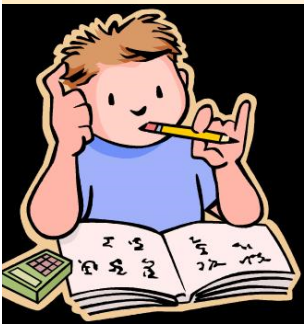
} different answer

Do brackets matter? Evaluate each of the following to answer this question.

$(-4)^4$ <small><math>-4 \times -4 \times -4 \times -4</math></small>	$-(4)^4$	$-4^4$	$(-)(-)(-)(-)$ $-(-4)^3$ <small><math>-(-4 \times -4 \times -4)</math></small> $64$
+256	-256	-256	← odd

Brackets matter when the base is negative!





# Homework questions

12, a)  $4 \times 4 \times 4 \times 4 = 4^4$

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7, 8, 9, 12, 13, 14, 16

#7.

power	base
a) $2^7$	2

#8.

power	exponent
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#9.

power	R.M
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