Intro to college math: Chapter 1.2
Order of Operations

* Exponent — the exponent tells us how many times to multiply the base by itself.

2^4 ← exponent, ↑ Base $= 2 \cdot 2 \cdot 2 \cdot 2 = 16$ $\qquad 5^2 = 5 \cdot 5 = 25$

* Exponent 1 — any number with the exponent 1 is equal to the number itself.

$2^1 = 2 \qquad 5^1 = 5 \qquad 15^1 = 15$

* Exponent 0 — any number with the exponent 0 is equal to 0.

$2^0 = 1 \qquad 7^0 = 1 \qquad 100^0 = 1$

1. Name the base and the exponent for: 9^5

   a. Base: 9

   b. Exponent: 5

9^5 ← exponent, ↑ Base

2. Name the base and the exponent for: 6^1

   a. Base: 6

   b. Exponent: 1

6^1 ← exponent, ↑ base

3. Use the definition of exponents as indicated repeated multiplication to simplify: 2^7

$2^7 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 = 128$

write this number down, this many times

To type into calculator:

1. Type base number into calculator
2. Press [^] button, (on left side)
3. Type in exponent number
4. Press enter

4. Use the definition of exponents as indicated repeated multiplication to simplify: 10^2

$10^2 = 10 \cdot 10 = 100$

write this number down, this many times

To type into calculator:

1. Type base number into calculator
2. Press [^] button, (on left side)
3. Type in exponent number
4. Press enter

5. Use the definition of exponents to expand each of the following expressions. Then multiply according to the rule for multiplication.

a.) $-8^2 = -8 \cdot 8 = \boxed{-64}$

write down − sign, then write down this number, this many times.

To type into calculator:

① Press [(−)] button, (on bottom)
② Type base number into calculator
③ Press [^] button, (on left side)
④ Type in exponent number
⑤ Press enter

b.) $(-8)^2 = (-8) \cdot (-8) = \boxed{64}$

write down everying inside ( ), including ( ), this many times.

To type into calculator:

① Press [(] button
② Press [(−)] button, (on bottom)
③ Type base number into calculator
④ Press [)] button
⑤ Press [^] button, (on left side)
⑥ Type in exponent number
⑦ Press enter

6. Use the definition of exponents to expand each of the following expressions. Then multiply according to the rule for multiplication.

a.) $(-5)^3 = (-5)\cdot(-5)\cdot(-5) = -125$

write down everything inside ( ), including ( ), this many times.

To type into calculator:

1. Press [(] button
2. Press [(-)] button, (on bottom)
3. Type base number into calculator
4. Press [)] button
5. Press [^] button, (on left side)
6. Type in exponent number
7. Press enter

b.) $-5^3 = -5\cdot5\cdot5 = -125$

write down − sign, then write down this number, this many times.

To type into calculator:

1. Press [(-)] button, (on bottom)
2. Type base number into calculator
3. Press [^] button, (on left side)
4. Type in exponent number
5. Press enter