

## 1.4 Multiplying Integers p. 24

Factor: a number being multiplied

$$5 \cdot 3 = 15$$



factor

↳ product

Rules for 2 integers:

$$\left. \begin{array}{l} 5 \cdot 3 = 15 \\ (-5)(-3) = 15 \end{array} \right\} \text{same signs} \rightarrow \text{positive}$$

$$\left. \begin{array}{l} -5(3) = -15 \\ 5(-3) = -15 \end{array} \right\} \text{different signs} \rightarrow \text{negative}$$

### Examples

1)  $8(-7) = -56$

2)  $(-10)^2 = 100$

3)  $4 \cdot 5 = 20$

4)  $(-1)^3 = (-1)(-1)(-1) = -1$

5)  $(-5)^2 = 25$

6)  $(-2)^4 = (-2)(-2)(-2)(-2) = 16$

Rules for more than 2 factors:

count how many negative factors there are!

odd  $\rightarrow$  negative

even  $\rightarrow$  positive

7)  $-4(2)(5)(-1)(-1) = -40$   
 $\uparrow \quad \uparrow \quad \uparrow$   
 (3)

8)  $3(-1)(4)(1)(2)(1)(-1) = +24$   
 $\uparrow \quad \uparrow \quad \uparrow$   
 (2)

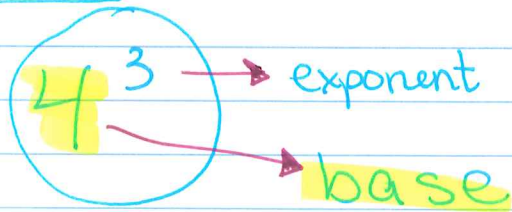
9)  $4(-5)(-1)(3)(1)(0)(-2) = 0$

10)  $(-5)(1)(-7)(-1)(2)(1) = -70$   
 $\uparrow \quad \uparrow \quad \uparrow$

11)  $4(-2)(1)(3)(1)(-1)(-1) = -24$   
 $\uparrow \quad \uparrow \quad \uparrow$   
 (3)

12)  $(-5)(-7)(20) = 700$

## Power



$$(-6)^2 = 36$$

$$-6 \cdot -6$$

$$-6^2 = -36$$

$$-6 \cdot 6$$

if a power doesn't have parenthesis, your product will always be negative.

$$-4^2 = -16$$

$$(-3)^4 = 81$$

$$(-3)(-3)(-3)(-3)$$

$$-4^3 = -64$$

$$(-4)^3 = -64$$

$$-4 \cdot 4 \cdot 4$$

$$-4 \cdot -4 \cdot -4$$