

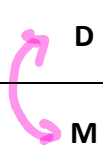
Name: \_\_\_\_\_

Date: \_\_\_\_\_

<b>Learning Goal 2.3</b>	I can evaluate an expression using order of operations with powers and applying exponent laws.
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B	Brackets - all operations inside the brackets happen first
E	Exponents
D	Division
M	Multiplication
A	Addition
S	Subtraction.

PEMDAS



} swap these, but  
work left to right

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**Example** Evaluate the following expressions. Show all your work.

a.  $3^3 + 2^3$   
 $= (3 \times 3 \times 3) + (2 \times 2 \times 2)$   
 $= 27 + 8$   
 $= \underline{35}$

b.  $(3 + 2)^3$   
 $= (5)^3$   
 $= 5 \times 5 \times 5$   
 $= \underline{125}$

c.  $3^3 - 2^3$   
 $= 27 - 8$   
 $= \underline{19}$

d.  $(3 - 2)^3$   
 $= 1^3$   
 $= \underline{1}$

~~B~~  
E  
D  
M  
A  
S

**Example** Evaluate the following expressions. Show all your work.

BEDMAS

a.  $(2 \times (-3)^3 - 6)^2$

$$= (2 \times (-27) - 6)^2$$

$$= (-54 - 6)^2$$

$$= (-60)^2$$

$$= 3600$$

b.  $(18^2 + 5^0) \div (-5)^3$

$$= (324 + 5^0) \div (-5)^3$$

$$= (324 + 1) \div (-5)^3$$

$$= 325 \div (-5)^3$$

$$= 325 \div (-125)$$

$$= \frac{-325}{125} = \frac{-13}{5} = -2.6$$

$$(6 \times 10)^2 = 6^2 \times 10^2$$

c.  $(4 \div 9^0)^2 \div (5 + (-3))^2$

$$= (4 \div 1)^2 \div (5 + (-3))^2$$

$$= 4^2 \div (5 + (-3))^2$$

$$= 16 \div (5 + (-3))^2$$

$$= 16 \div (2)^2$$

$$= 16 \div 4$$

$$= 4$$

**Example** Insert brackets to make the statement true

a.  $( [(8 + 6) \div 2]^2 + 9^0 ) \div 5 = 10$

b.  $8 + ( [(6 \div 2)^2 + 9^0] \div 5 ) = 10$

c.  $(8 + 6) \div ( [(2)^2 + 9^0] \div 5 ) = 14$