

ALGEBRA -- 1.1 & 1.2, Evaluate Expressions & Apply Order of Operation pg. 2 & pg. 8

- LOAL: 1.1 Evaluate the algebraic expressions and powers
1.2 Use the order of operations to evaluate an expression

WARM - UP:

Perform the indicated operation.

1. $12 \div 1.5 = 8$

2. $3.3 \times 7 = 23.1$

3. $11.6 - 5.9 = 5.7$

4. Julia ran $10\frac{2}{3}$ miles last week and $8\frac{5}{6}$ miles this week. How many more miles did she run last week? (no decimals in your answer, bumper right? Fractions are friendly ☺)

$$10\frac{2}{3} - 8\frac{5}{6}$$

$$\frac{20}{3} - \frac{53}{6} = \frac{40}{6} - \frac{53}{6} = \frac{1}{6} = 1\frac{5}{6}$$

1 5/6 miles

NOTES:

Evaluate the expression when the variable is 4.

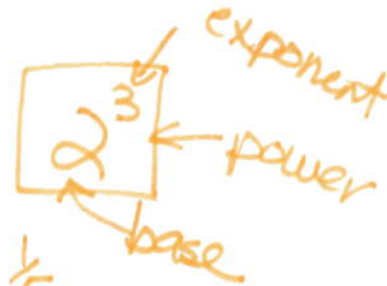
4c $4 \cdot 4 = 16$
 $4(4)$

$\frac{8}{c} = \frac{8}{4} = 2$

$15 + c = 15 + 4 = 19$

You are ordering a skateboard and a helmet from an online store. The total weight of the two items can be represented by $s + h$, where s is the weight of the skateboard and h is the weight of the helmet. Find the total weight if the helmet weighs 1.3 kilograms and the skateboard weighs 5.4 kilograms.

$s + h$
 $5.4 + 1.3 = 6.7 \text{ Kg}$



Write the power in words and as a product.

$(\frac{1}{5})^1$ one-fifth raised to the first power $\frac{1}{5}$

6^2 six to the second power OR six squared $6 \cdot 6 = 36$

3^4 three raised to the fourth power $3 \cdot 3 \cdot 3 \cdot 3 = 81$

p^3 p raised to the third power
OR p cubed $p \cdot p \cdot p = p^3$

Evaluate the expression.

n^5 when $n = 3$ $3^5 = 243$
 $3 \cdot 3 \cdot 3 \cdot 3 \cdot 3$

d^2 when $d = \frac{9}{5}$ $(\frac{9}{5})^2 = \frac{9}{5} \cdot \frac{9}{5} = \frac{81}{25}$

Each side of a square garden measures 22 feet. You are going to buy fertilizer for the garden before you begin planting and you need to determine its area. Find the area of the garden.



$$A = \text{side}^2$$

$$A = 22^2 = 484 \text{ ft}^2$$

ORDER OF OPERATIONS – had to be created for consistency, so we all get the same answers!

P.E.M.D.A.S.

P – do any and all inside parentheses first!
 E – do exponents! Either inside parentheses or after you have cleared the parentheses

MD – now multiply/divide or divide/multiply
 AS – finish with all add or subtract, going left to right

Evaluate the expression without using your calculator.

$$6 + 12 \div 3 \times 4^2 \quad \underline{70}$$

$$32 \div 2^3 + 6 \quad \underline{10}$$

$$24 \div (4^3 - 1) \quad \underline{8}$$

$$6 + 12 \div 3 \times 16$$

$$6 + 64 = \underline{70}$$

$$32 \div 8 + 6$$

$$4 + 6 = \underline{10}$$

$$48 - (6 + 5^2) \quad \underline{17}$$

$$3[32 \div (2 + 6)] \quad \underline{12}$$

$$-2[(9 + 3) \div 4] \quad \underline{\quad}$$

$$48 - (6 + 25)$$

$$48 - 31 = \underline{17}$$

$$3[32 \div 8]$$

$$3(4)$$

Evaluate the expression when...

$$x = 3 \quad \frac{10x}{2(x+2)} = \frac{10 \cdot 3}{2(3+2)} = \frac{30}{10} = \underline{3}$$

$$y = 8 \quad 12 - y - 1 \quad \underline{\quad}$$

$$y^2 - 3 \quad \underline{61}$$

$$8^2 - 3$$

John had 4 copies of a science report made to give to his lab partners. In each copied report there were 20 black - and - white pages and 5 colored pages. He paid a copy center to make and bind the copies. His cost in dollars is given by the expression $4(5c + 20b)$, where c is the cost of a color page and b is the cost of a black - and - white page. What is the total cost if a color page costs \$2 and a black - and - white page costs \$.05?

$$4(5c + 20b)$$

$$4(5 \cdot 2 + 20 \cdot .05) \rightarrow 4(10 + 1) = \$44$$

$$4(11) = \$44$$

Let's see if you comprehended what we worked on in class...

Try _____

for homework