

Homework #6: Due Friday, October 25

Name _____
Buckley or Gietzen

Using **Order of Operations**, solve the following problems. **Show work!**

Don't forget:

P
E
M
D
A
S

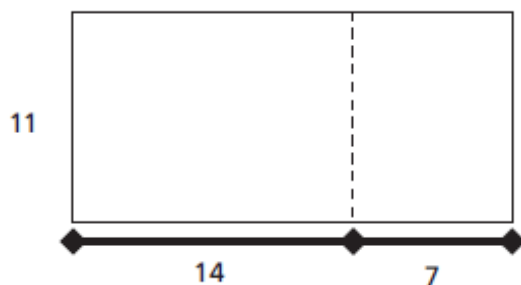
1. $25 + 18 \div 3$

2. $(4 + 6) \cdot 9 - 11$

3. $17 + (4 \cdot 3^2 + 5)$

4. $2^3 + 4 \cdot 6 - 9$

5. Which of the following expressions represent the **area** of the larger rectangle? *Select all that apply.*



A. $11(14 + 7)$

B. $2 \cdot 21 + 2 \cdot 11$

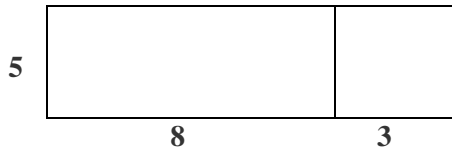
C. $11 \cdot 14 \cdot 7$

D. $11 \cdot 14 + 11 \cdot 7$

E. $11 \cdot 21$

F. $154 + 77$

6. Use what you know about the **distributive property** to write number sentences for the **area** of the rectangle in **two** different ways. Then find the area using both expressions.



1. _____ Area = _____
2. _____ Area = _____

7. Complete the statements below by **circling** the expressions that make each statement true.

$$6(5 \times 5 - 1) - 4$$

- a. To evaluate the expression above using the order of operations, first compute $\left[\begin{array}{l} 5 \times 5 \\ 5 - 1 \end{array} \right]$.

- b. Next compute $\left[\begin{array}{l} 5 \times 4 \\ 6 \times 5 \\ 25 - 1 \end{array} \right]$.

- c. The expression $6(5 \times 5 - 1) - 4$ simplifies to $\left[\begin{array}{l} 116 \\ 140 \\ 149 \end{array} \right]$

8. Solve the following problems using Order of Operations.

a. $5 + 3 \cdot 8$

b. $42 - 40 \div 2^3$

c. $23 + 4(16 - 9)$

9. Your best friends have done their math homework, but they got different answers. Because you are a “mathemagician” they have asked you to look at their work and determine who’s correct. Look at the work below. Determine which friend has the correct answer (hint: you may want to work it out yourself). You will need to provide an explanation to the friend with the incorrect answer so that your friend understands what their mistake was.

Friend #1

$$100 - 10 \times 8 + 40 \div 5 \cdot (5-3)$$

$$100 - \underline{10 \times 8} + 40 \div 5 \cdot (2)$$

$$100 - 80 + 40 \div \underline{5 \cdot (2)}$$

$$100 - 80 + \underline{40 \div 10}$$

$$\underline{100 - 80} + 4$$

$$\underline{20} + 4$$

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Friend #2

$$100 - 10 \times 8 + 40 \div 5 \cdot (5-3)$$

$$100 - \underline{10 \times 8} + 40 \div 5 \cdot (2)$$

$$100 - 80 + \underline{40 \div 5} \cdot (2)$$

$$100 - 80 + \underline{8(2)}$$

$$\underline{100 - 80} + 16$$

$$\underline{20} + 16$$

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a. Which friend has INCORRECTLY solved the problem? _____

b. Provide an EXPLANATION about what they did wrong:

10. Find the missing number to make each statement true.

a. $25(10 + 7) = (25 \times \underline{\quad}) + (25 \times 7)$

b. $16(5 + 3) = (\underline{\quad} \times 5) + (\underline{\quad} \times 3)$

c. $7(20 + 4) = (7 \times 20) + (7 \times \underline{\quad})$

d. $(6 \times 11) + (6 \times 2) = \underline{\quad}(10 + 7)$

e. $8(\underline{\quad} + 4) = 72$

f. $\underline{\quad}(8 + 2) = 100$

11. Insert parentheses and/or addition signs to make each equation true.

a. $6 \ 3 \ 2 \ 5 = 16$

b. $6 \ 3 \ 2 \ 5 = 23$

c. $6 \ 3 \ 2 \ 5 = 35$

d. $6 \ 3 \ 2 \ 5 = 36$