

SOL HW 1.6a

October 6, 2016 6:39 PM

Name: Key

Date: _____

Math 8 Section 1.6a Order of Operations:

1. Evaluate each of the following operations. Remember the order of the operations. Show all your steps:

| | | |
|---|--|---|
| a) $2 + 5 \times 4$ $2 + 20$ $= 22$ | b) $-5 - 8 \div 2$ $-5 - 4$ $= -9$ | c) $8 \times 2 + 6$ $16 + 6$ $= 22$ |
| d) $-9 \times 7 - 20$ $-63 - 20$ $= -83$ | e) $8 \div 2 + 6$ $4 + 6$ $= 10$ | f) $12 - 6 \times (-3)$ $12 - (-18)$ $= 30$ |
| g) $3 + 11 \times 4 - 21$ $3 + 44 - 21$ $47 - 21$ $= 26$ | h) $-6 + 24 \div 8 - 2$ $-6 + 3 - 2$ $= -3 - 2$ $= -5$ | i) $-12 - 18 \div 9 - 6$ $-12 - 2 - 6$ $= -14 - 6$ $= -20$ |
| j) $(7 + 2) \times 4 - 5 + 12 \div 2$ $9 \times 4 - 5 + 12 \div 2$ $36 - 5 + 6$ $31 + 6$ $= 37$ | k) $11 \times (3 + 4) - 12 \times 2$ $11 \times 7 - 24$ $77 - 24$ $= 53$ | l) $-20 \div (12 + 8) - 15 \div 5 + 1$ $-20 \div (20) - 3 + 1$ $-1 - 3 + 1$ $= -3$ |
| m) $2(12 \div 3 + 4) + 12 \div 4$ $2(8) + 3$ $16 + 3$ $= 19$ | n) $(-8 \times 2 + 12 \div 3) \div 4 \times 3$ $(-16 + 4) \div 4 \times 3$ $(-12) \div 4 \times 3$ $= -9$ | p) $12 \div 4 \times 3 \div 6 \times 8 \div 4$ $\frac{3 \times 3 \times 3 \times 2}{1 \times 2 \times 1} = \frac{3 \times 1 \times 2}{1 \times 2 \times 1}$ $= 3$ |
| q) $(12 + 2) \times 4 - (6 \times 3 \div 2 + 12)$ $14 \times 4 - (9 + 12)$ $56 - 21$ $= 35$ | r) $4 + (-3 - 2) \times (14 - 2) + 9 \times (6 - 2)$ $4 + (-5) \times (12) + 9 \times 4$ $4 + (-60) + 36$ $-60 + 40$ $= -20$ | s) $3(1 - (5 \times (5 + 2) + 1) - 2)$ $3(1 - (5 \times 7 + 1) - 2) \leftarrow$ $3(1 - 36 - 2) \leftarrow$ $3(-37) \leftarrow$ $= -111 \leftarrow$ |

2. What operations can be placed into the boxes so that the expression will be true:

| | | |
|--|---|---|
| a) $12 \boxed{+} 2 \boxed{\times} 3 \boxed{-} 1 = 17$ ✓ $12 + 2 + 3 \times 1 = 17$ $12 \div 2 \times 3 - 1 = 17$ ✓ | b) $9 \boxed{-} 14 \boxed{\div} 2 \boxed{\times} 3 = -12$ ✓ | c) $9 \boxed{\times} 4 \boxed{-} 44 \boxed{\div} 2 = 14$ ✓ $36 - 22$ ✓ |
|--|---|---|

3. Indicate ~~the~~ all mistakes in each of the following examples shown below. There are at least one mistake in each example:

| | | |
|---|--|--|
| a) Julie's Work: $15 \div 3 + 2 - 7 \times 4$ $= 15 \div 5 - 28$ $= 3 - 28$ $= -25$ | b) Tim's work: $-27 + 9 \times 2 + 6$ $= -27 + 9 \times (-4)$ $= -27 + (-36)$ $= 63$ | c) Tracy's Work: $-3 - 4 - 5 \times 2 + 2 \div (-1)$ $= -7 - 10 + (-2)$ $= -15 = -19$ |
|---|--|--|

4. Where can you insert a pair of brackets into the following expression so that the value can be maximized?

$(3 + 6 \times 9 + 2 - 5) \times 4$ → 216
 $(3 + 54 + 2 - 5) \times 4$
 $54 \times 4 = 216$

5. Jason wrote six math exams and got the following scores: 87%, 74%, 65%, 92%, 78%, and 99%. What is the average score for his six exams?

$= \frac{87 + 74 + 65 + 92 + 78 + 99}{6}$
 $= 82.5\%$

6. Thomas plays on the school basketball team. He gets 3 points if he scores a 3pointer, 2 points for fields-goals, and 1 point for each foul shot made. He scored 4 3pointers, 6 fg, and 9 free throws. How many points did he get?

$(4 \times 3) + (6 \times 2) + 9 \times 1$
 $12 + 12 + 9 = 33$

7. A certain small factory employs 98 workers. Of these 10 receive a wage of \$200 per day and the rest receive \$100 per day. To the management, a week is equal to 6 working days. How much does the factory pay out for each week?

$(10 \times 200) + (88 \times 100)$ 1 week = 6×10800
 $= 2000 + 8800$
 $= 10800 / \text{Day}$
 $= 60000 + 4800$
 $= 64800$

8. The final grade in a course is the average of the scores on 10 tests. Each test is graded on a scale of zero to 100 inclusive. A student's average on the first 7 tests was 84. The final grade of the student in the course was 63. What was the average student grade on the last 3 tests?