

Foundations for College Algebra

Spring 2017 - M. Goodroe

Quiz #3

Name: _____

Date: _____

Show all work on quiz.

Use Order of Operations to simplify the following expressions. Make sure you are showing which operation you are simplifying from line to line. DO NOT USE A CALCULATOR!!

1) $28 - (20 \div 4) + 5 \cdot 3^2$

$$28 - (5) + 5 \cdot 9$$

$$28 - 5 + 5 \cdot 9$$

$$28 - 5 + 45$$

$$23 + 45$$

$$\boxed{68}$$

2) $7 \cdot [5^2 + 6 \cdot (2 + 7)]$

$$7 \cdot [25 + 6 \cdot (9)]$$

$$7 \cdot [25 + 54]$$

$$7 \cdot 79$$

$$\boxed{553}$$

3) $\frac{4^2 - 2^3 + 117}{75 \div 3 \cdot 5 \cdot 1 \div 5}$

$$\frac{16 - 8 + 117}{25 \cdot 5 \cdot 1 \div 5}$$

$$\frac{8 + 117}{125 \cdot 1 \div 5}$$

$$\frac{125}{125 \div 5}$$

$$\frac{125}{25}$$

$$\boxed{5}$$

$$\begin{aligned}
4) & 2^5 - [14 + 5\sqrt{15-6}] + |28-25|^3 \\
& 32 - [14 + 5\sqrt{9}] + |3|^3 \\
& 32 - [14 + 5(3)] + 3^3 \\
& 32 - [14 + 15] + 27 \\
& 32 - [29] + 27 \\
& 3 + 27 \\
& \boxed{30}
\end{aligned}$$

5) Explain the mistake in the following problem and show the correct use of Order of Operations:

$$27 - 4(34 - 40)$$

$$= 27 - 4(-6) \leftarrow \text{multiply first, before subtraction}$$

$$= 23(-6)$$

$$= -138$$

$$27 + 24 = 51$$