

Instructions. (0 points) Show your work and clearly mark your answer. No calculators allowed.

1. Determine the value of each expression.

$$-(-15)$$

$$-|-35|$$

2. Simplify the given expressions. If the answer does not exist or is undefined, write "undefined".

a) $5 \cdot 0$

b) $\frac{20}{0}$

c) $0 \div 6$

d) $\frac{0}{44}$

e) $72 \div 0$

3. Write the prime factorization of 360 in compact form. Show work using a prime factor tree.

4. Find the perimeter AND area of a rectangle with a length of 6 meters and a width of 14 meters. Be sure to answer in a complete sentence using proper units.

5. Use order of operations to simplify the expressions:

a) $-40 - 9 - (-3)$

b) $(-4 - 6) - (2 - (-5))$

6. Use order of operations to compute the exact value of each expression:

a) $30 \div 5 \cdot 6$

b) $5 - 36 \div 9 \cdot 3 - 6$

c) $3 + 2| - 10 - (-5)^2|$

d) $\frac{7 \cdot 8 - (-4)}{21 - 27}$

7. Combine like terms and simplify completely:

a) $5 + (8 - 4x)$

b) $-2(6a + 10b) - 4(a + 5b)$

c) $-10\left(\frac{1}{5}x - \frac{1}{2}y\right) + 12\left(\frac{3}{4}x - \frac{5}{6}y\right)$

8. Evaluate the following expressions at the given value(s):

a) $2x^2 + 5x - 3$ at $x = -2$

b) $5x^2 - 2xy + 3y^2$ at $x = 3$ and $y = -1$

9. Use the following options to identify the property that justifies each statement and write one letter next to each identity

- a) Commutative property of addition
- b) Commutative property of multiplication
- c) Associative property of addition
- d) Associative property of multiplication
- e) Additive Identity
- f) Distributive property
- g) Multiplicative inverse

$$6(4x + 5) = 24x + 30 \quad \text{Letter:}$$

$$6 + 7 = 7 + 6 \quad \text{Letter:}$$

$$-6(4 \cdot 3) = (-6 \cdot 4) \cdot (3) \quad \text{Letter:}$$

$$19 + 0 = 19 \quad \text{Letter:}$$

$$8 \cdot (-2) = -2 \cdot 8 \quad \text{Letter:}$$

$$3 \left(\frac{1}{3} \right) = 1 \quad \text{Letter:}$$

10. Solve the following equations for x and CHECK your answers:

a) $-6x + 20 = -64$

b) $x - 13.5 = -15.2$

c) $4y + 15 = y$

11. Solve the following equations for x CHECK IS NOT REQUIRED:

a) $2(5x - 3) - 2x + 4 = 5 - (6x + 1)$

b) $\frac{1}{4}x - \frac{1}{12} = \frac{1}{3}x + \frac{1}{6}$

c) $0.05 + 0.07(100 - x) = 3.2$

Exam 1 is not limited to these examples. All topics covered so far are fair game for the Exam including vocabulary terms. **Also, please study the word problems from homework assignments. There will be problems very similar to the actual homework problems on the exam.**