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Algebra 1

Chapter 1 Review

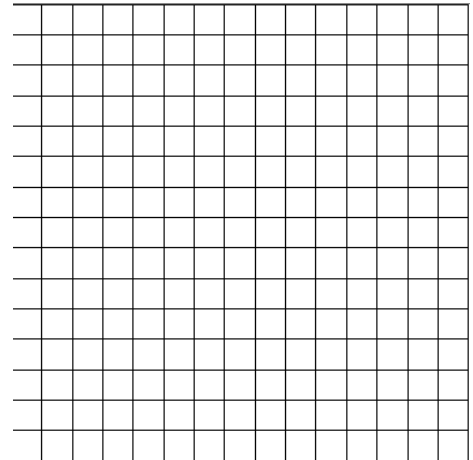
Directions: Answer the following questions to the best of your ability. Use your notes and your book to help you.

1. Define the following terms that we used in Chapter 1

- a. Rational Number
- b. Integer
- c. Opposite
- d. Perfect square
- e. Order of operations

Solve the following problem.

2. Use a table, an equation, and a graph to represent the relationship. Petra earns \$22 per hour.



3. Name all the subsets each number can be classified as

a. -37

b. 2.434434443...

c. $\sqrt{42}$

4. Evaluate each expression for $a = -3$, $b = 2$, $c = -1$.

a. $2a - b^2$

b. $a - bc$

c. $\frac{2a+b}{2}$

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5. Simplify using the correct Order of Operations. SHOW ALL WORK!

a. $3 \times 8 - 32 \div 4$

b. $2 \times 2^3 - 10$

c. $(-4 + 2)^2 \times 2$

d. $45 + (-3 - 6) \div 3$

e. $3 - (18 \div 6) \times 3$

f. $8^2 \div (-4 \div 2)$

6. Evaluate each expression for $a = -\frac{5}{6}$, $b = -\frac{2}{3}$

a. $a - 2b$

b. $-6ab$

c. $a \div b$

7. Evaluate each expression for $x = -6$, $y = 2$, $z = 3$

a. $-3^2 + z^2$

b. $y + (-4)x$

c. $5xy$

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8. Add or subtract. You will need to know how to do this with NO CALCULATOR!

a. $-10 - (-7)$

b. $23 - 12$

c. $-14 - 10$

9. Write the algebraic expression for the word phrases

a. 2 more than twice a number j

b. 15 plus the quotient of 60 and w

c. 9.85 less than the product of 37 and t

10. Write a word phrase for each algebraic expression

a. $\frac{z}{8} - 9$

b. $14.1 - w$

c. $(4+h) - 10$

11. Write an equation to show the cost of buying a number of tickets to a movie at \$9.50 each. Don't forget to **define your variables**.

12. Write an example illustrating each of the following properties:

a. Identity Property of Multiplication: _____

b. Inverse Property of Addition: _____

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- c. Zero Property of Multiplication: _____
- d. Associative Property of Multiplication: _____
- e. Community Property of Addition: _____
- f. Commutative Property of Multiplication: _____
- g. Associative Property of Addition: _____
- h. Identity Property of Addition: _____
- i. Distributive Property: _____
- j. Multiplicative Inverse Property: _____

13. Find the simplest form

- a. $-(3m - 4n)$
- b. $7x - 5 - 3x + 2y + 1$

14. Simplify

- a. $1.1 - (7d + 0.1) + 3d$
- b. $-1.5(-8x - 10) + 6x - 7$

15. Fill in each _____ with $<$, $>$, or $=$.

- a. $\frac{2}{3}$ _____ $\frac{7}{12}$
- b. -5.112 _____ -5.12

16. Order from least to greatest.

- a. $\frac{5}{6}$, $\frac{9}{10}$, $\frac{3}{5}$
- b. 0.7 , -1.7 , $.07$
- c. $\sqrt{7}$, $\frac{3}{2}$, -200 , $\sqrt{\frac{15}{2}}$

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17. Find the next two terms in the following sequences using Inductive Reasoning. Explain the pattern.

a) 2, 5, 10, 17, 26, 37, _____, _____

b) 100, -50, 25, -12.5, _____, _____

18. Is $x = -5$ a solution of the equation $x^2 - 5x = 0$? Show or explain how you know.

19. Is $(2, -3)$ a solution to the equation $4x - 2y = 14$? Show or explain how you know.

20. Find the distance as a simplified expression from the START to the END, following the black path.

