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Algebra Summer Assignment

At the beginning of the school year, an assessment of your knowledge will be given in class during the first week of classes. This assessment will be based on the topics from your summer packet. Below are topics students entering into Algebra are expected to know and have a foundational understanding:

- Solving one and two step equations (6th, 7th, 8th grade)
- Applying Fractional Operations
- Solving inequalities (7th grade)
- Know your multiplication tables
- Know your operations with Integers (sign numbers) (6th, 7th grade)
- Know how to solve ratios and proportions (6th, 7th grade)
- Sets of real numbers (6th grade)
- Simplifying radicals (8th grade)
- Understanding percent word problem (7th grade)
- Understanding basic word problems (6th, 7th grade)
- Rationals versus Irrational (6th grade)
- Pythagorean theorem (8th grade)
- Area and perimeter word problems (6th grade)
- Graphing lines (8th grade)
- Slope intercept form (8th grade)
- Basic statistics(mean median mode) (6th grade)
- Basic shapes and properties solving word problems (7th grade)
- Basic Triangle angles and measurements (7th grade)
- Surface Area and Volume (6th, 7th, 8th grade)
- Probability (7th grade)
- Operations with Fractions (6th grade)
- Exponents (8th grade)
- Transformations(8th grade)
- Similar Figures (8th grade)
- Functions (8th grade)

To aid in the recollection of topics, utilize Youtube, Khan Academy, and various Math websites.

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Show all work for questions requiring work. Space is provided.

<p>Show all work.</p> <p>1. Five percent of $\frac{1}{5}$ is equal to</p> <p>(A) $\frac{1}{25}$ (B) $\frac{1}{10}$ (C) 1 (D) $\frac{1}{100}$</p>	<p>2. If x and y are consecutive non-zero integers, then it must be true that</p> <p>(A) xy is odd (B) $x^2 + y$ is even (C) $x + xy$ is odd (D) $x + y$ is odd</p>
<p>Show all work.</p> <p>3. Valerie swam one lap in S seconds, faster than Peter by 4 seconds. Which of the following represents the average lap time of the two swimmers?</p> <p>(A) $S + 2$ (B) $S - 2$ (C) $S - 1$ (D) $S + 4$</p>	<p>Show all work.</p> <p>4. $\frac{13^4}{13^3} =$</p> <p>(A) 169 (B) 13 (C) 26 (D) $\frac{1}{13}$</p>
<p>Show all work.</p> <p>5. For which value of x does $\frac{4}{x} + 3 = \frac{1}{x}$?</p> <p>(A) -1 (B) $\frac{1}{3}$ (C) $\frac{3}{10}$ (D) $\frac{1}{2}$</p>	<p>Show all work.</p> <p>6. $x(y + x + z) =$</p> <p>(A) $x^2 + xy + xz$ (B) $xy + xz + yz$ (C) $(x + y)(x + z)$ (D) $2x + xy + xz$</p>
<p>7. Which of the following statements is true?</p> <p>(A) The greatest prime factor of 18 is 9. (B) The greatest prime factor of 21 is 3. (C) The greatest prime factor of 4 is 2. (D) The greatest prime factor of 34 is 11.</p>	<p>8. Show all work.</p> <p>What is the length of a rectangle whose area is 8 and whose width is half its length?</p> <p>(A) 6 (B) 4 (C) 2 (D) 3</p>
<p>Show all work.</p> <p>9. For what value of P is it true that $\frac{2P+2}{3P-1} = 2$?</p> <p>(A) $\frac{3}{2}$ (B) 2 (C) 1 (D) -3</p>	<p>Show all work.</p> <p>10. If $ab + 2c = c$, then $c =$</p> <p>(A) $2ab + c$ (B) $4abc$ (C) $3abc + 4c$ (D) $c + 2ab$</p>

Show all work:

19. If you add two ounces of water to a 16-ounce mixture consisting of equal amounts of milk and water, what portion of the resulting mixture is water?

- (A) $\frac{3}{10}$
- (B) $\frac{1}{5}$
- (C) $\frac{2}{5}$
- (D) $\frac{4}{9}$

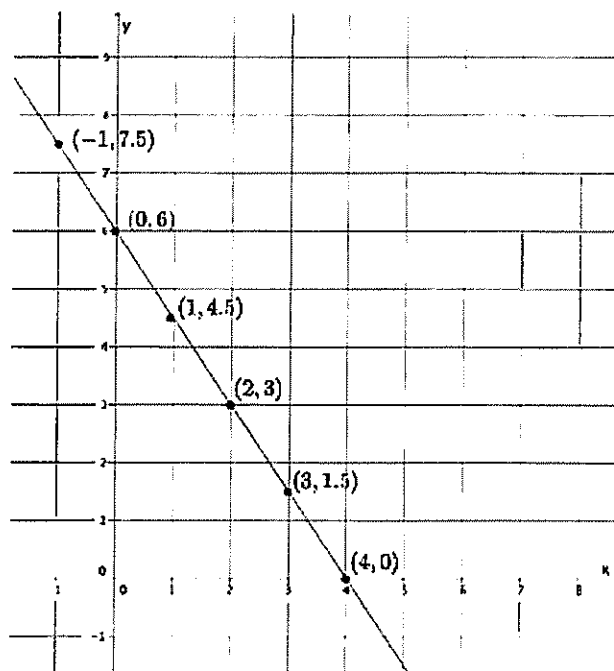
Show all work:

20. $2\sqrt{5} + 2\sqrt{125} =$

- (A) $4\sqrt{10}$
- (B) $10\sqrt{5}$
- (C) $8\sqrt{12}$
- (D) $12\sqrt{5}$

Part II: SHOW ALL WORK FOR EACH OF THE FOLLOWING:

1. Use the graph below to answer parts (a)–(c).



- a. Use any pair of points to calculate the slope of the line.
- b. Use a different pair of points to calculate the slope of the line.
- c. Explain why the slopes you calculated in parts (a) and (b) are equal.

3.

Students sold 275 tickets for a fundraiser at school. Some tickets are for children and cost \$3, while the rest are adult tickets that cost \$5. If the total value of all tickets sold was \$1,025, how many of each type of ticket was sold?

4. Solve for x:

$$\frac{1}{3}(6x - 12) \geq 5x$$

5. Solve for x:

$$4.5x - 12.5 = .5(10x + 13)$$