

Algebra 1 Summer Math Assignment:

Name:

- I. For each multiple-choice question, circle the correct answer. Show your work or thought process in the box on the right.

<p>1. There are three times as many girls as boys in the Spanish Club of Rutherford High School. If there are 36 members in the club, how many of them are boys?</p> <p>A. 9 B. 12 C. 15 D. 27</p>	<p>WORK:</p>
<p>2. At Butcher Meat Pit, each hamburger comes with any of the following: tomato, onion, lettuce and/or cheese. On Saturdays, a customer can get a fabulous prize when buying a hamburger with <u>at least one</u> of these four items. How many different hamburgers qualify for a fabulous prize?</p> <p>A. 15 B. 16 C. 17 D. 18</p>	<p>WORK:</p>
<p>3. Solve the equation:</p> $2(3x) + 5 = 18 - x$ <p>A. $x = 1$ B. $x = 1.8571$ C. $x = 2.6$ D. $x = 4.6$</p>	<p>WORK:</p>
<p>4. The price (F) of a first class airline ticket is given by the formula $F = 2(C - 137) + 1.1C$, where C is the price of a coach ticket on the same flight. How much would a first class ticket cost on a flight if a coach ticket is \$269?</p> <p>A. \$295.90 B. \$538.00 C. \$559.90 D. \$591.80</p>	<p>WORK:</p>

5. Leon earns \$10 per hour, and Mark earns \$8 per hour. How long must Mark work in order to earn the same amount of money as Leon earns in five hours?

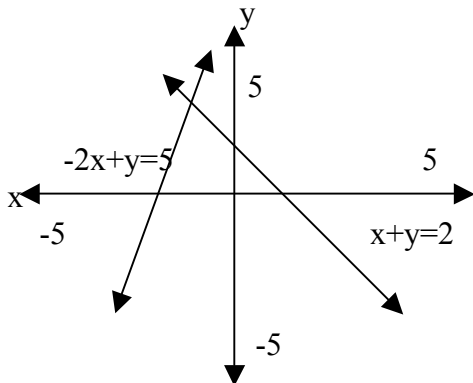
- A. 5 hours, 45 minutes
- B. 6 hours
- C. 6 hours, 15 minutes
- D. 6 hours, 25 minutes

WORK:

6. The system of linear equations

$$\begin{aligned}x + y &= 2 \\ -2x + y &= 5\end{aligned}$$

is graphed on the coordinate plane below. According to the graph, what is the solution to the system?



- A. (3 , - 1)
- B. (- 2.5 , 0)
- C. (0 , 2)
- D. (- 1 , 3)

WORK:

7. Hal, Gwen, and Aubrey each contributed money to buy a gift for a friend. Hal put in twice as much as Aubrey. Gwen paid \$3 less than Hal. If the gift cost \$42, how much did Gwen spend?

- A. \$9
- B. \$12
- C. \$15
- D. \$18

WORK:

II. Constructed Response Questions. Show all work and clearly indicate your final answer for each question.

1. At Rutherford High School, test grades are scored using a 0 to 100 range. Kimberly scores 83, 80, and 92 on her first three math tests.

A. After taking the 4th test, what is the lowest possible average that Kimberly can achieve? Explain how you obtained your answer.

B. After taking the 4th test, what is the highest possible average that Kimberly can achieve? Explain how you obtained your answer.

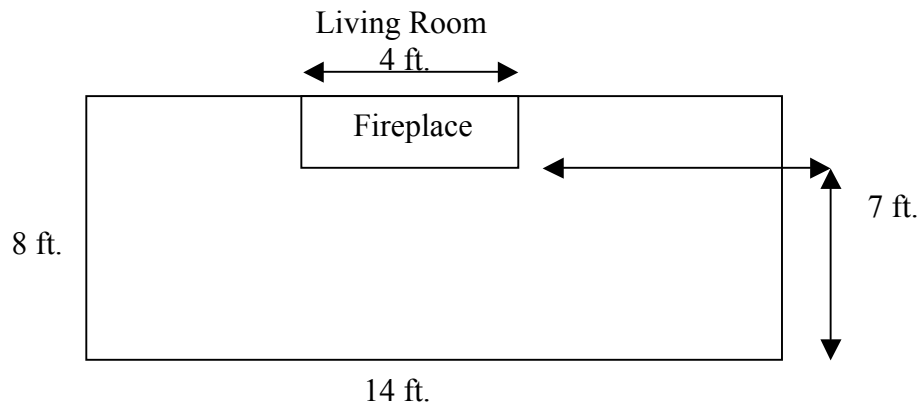
2. Examine the pattern below:

bulldogsbulldogsbulldogs...

A. If the pattern is continued, what letter will be in the 147th position?

B. If the pattern is continued, what letter will be in the 64th position?

3. The Walden family is planning to install a new floor covering in their living room and they are in the process of shopping for various types of floor coverings. Use the floor plan of their living room to find the cost of different types of floor coverings.



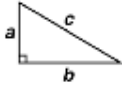
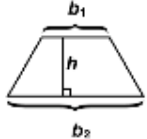
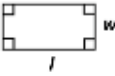
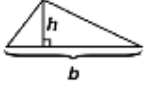


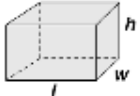
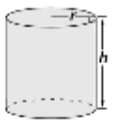



- A. A hardwood floor costs \$9.50 per square foot to install, including material and labor. Find the cost of installing this type of flooring and show your work.

- B. Wall-to-wall carpeting costs \$24.50 per square yard including material and labor. How much will it cost? Show your work.

C. Ceramic tiles that measure 6 inches on each side cost \$0.69 per tile. The installation fee is \$250.00. What is the total cost of this job? Show your work.

D. Which floor type would be the cheapest? Explain.

HIGH SCHOOL PROFICIENCY ASSESSMENT MATHEMATICS REFERENCE SHEET

<p>Pythagorean Formula</p> $c^2 = a^2 + b^2$ 	<p>Trapezoid</p> $\text{Area} = \frac{1}{2}h(b_1 + b_2)$ 	<p>60 seconds = 1 minute 60 minutes = 1 hour 24 hours = 1 day 7 days = 1 week 52 weeks = 1 year</p>
<p>Rectangle</p> $\text{Area} = lw$ $\text{Perimeter} = 2(l + w)$ 	<p>Triangle</p> $\text{Area} = \frac{1}{2}bh$ 	<p>12 inches = 1 foot 3 feet = 1 yard 36 inches = 1 yard 5,280 feet = 1 mile 1,760 yards = 1 mile</p>
<p>Parallelogram</p> $\text{Area} = bh$ 	<p>Circle</p> $\text{Area} = \pi r^2$ $\text{Circumference} = 2\pi r$ 	<p>100 centimeters = 1 meter 1000 meters = 1 kilometer</p>
<p>Rectangular Prism</p> $\text{Volume} = lwh$ $\text{Surface Area} = 2lw + 2wh + 2lh$ 	<p>Cylinder</p> $\text{Volume} = \pi r^2 h$ $\text{Surface Area} = 2\pi rh + 2\pi r^2$ 	<p>8 fluid ounces = 1 cup 2 cups = 1 pint 2 pints = 1 quart 4 quarts = 1 gallon 1000 milliliters (mL) = 1 liter (L)</p>
<p>Sphere</p> $\text{Volume} = \frac{4}{3}\pi r^3$ $\text{Surface Area} = 4\pi r^2$ 	<p>Cone</p> $\text{Volume} = \frac{1}{3}\pi r^2 h$ 	<p>16 ounces = 1 pound 1000 milligrams = 1 gram 100 centigrams = 1 gram 10 grams = 1 dekagram 1000 grams = 1 kilogram</p>
<p>The sum of the measures of the interior angles of a triangle = 180° The measure of a circle is 360° or 2π radians</p>		<p>$\pi \approx 3.14$ or $\frac{22}{7}$</p>
<p>Given a right triangle:</p>  <p>$\sin \theta = \frac{\text{opposite side}}{\text{hypotenuse}}$ $\cos \theta = \frac{\text{adjacent side}}{\text{hypotenuse}}$ $\tan \theta = \frac{\text{opposite side}}{\text{adjacent side}}$</p>		<p>Given the points (x_1, y_1), (x_2, y_2),</p> <p>Distance between two points:</p> $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ <p>Slope Formula:</p> $m = \frac{\text{rise}}{\text{run}} = \frac{y_2 - y_1}{x_2 - x_1}$ <p>Slope-intercept form of a line:</p> $y = mx + b$
<p>Interest = principal \times rate \times time</p> <p>Simple Interest Formula: $A = p + prt$ Compound Interest Formula: $A = p \left(1 + \frac{r}{n}\right)^{nt}$</p> <p>$A$ = amount after t years; p = principal; r = annual interest rate; t = number of years; n = number of times compounded per year</p>		<p>The number of combinations of n elements taken r at a time is given by $\frac{n!}{(n-r)!r!}$</p> <p>The number of permutations of n elements taken r at a time is given by $\frac{n!}{(n-r)!}$</p>

