Foundations of Algebra Test
Algebra 1 Unit 1 T1-T2 Review

Name Key

1. Shannon has spent \$850 on gasoline and repairs for her car in the last 6 months. Of this total, she spent \$300 on repairs. The gasoline she purchased cost \$1.29 per gallon. Which of the following can be used to determine how many gallons of gas, g, Shannon has bought within the last 6 months?

A $1.29g - 300 = 850$
B $1.29g + 300 = 850$
C $1.29 - 300g = 850$
D $1.29 + 300g = 850$

2. Simplify the algebraic expression
$3(x-1) - 4(2x+2)$
$3x - 3 - 8x - 8$

A $11x - 7$
B $-5x - 11$
C $5x + 1$
D $-x - 11$

3. Which situation is best represented by the algebraic expression $65 + 32x$?

A Susie owes money to her parents. She initially gave them \$65 and has agreed to pay \$32 a month until she has paid them completely.

B Paula needs an electrician to fix her outlet. The electrician charges \$32 to come to her house and an additional \$65 per hour.

C Lisa has \$65 in her checking account and spends thirty-two dollars a week.

D The set up fee for making T-shirts is \$32. The cost of each shirt is \$65.

4. Diego solved the following equation using the steps shown below.

Step 1 $3x + 6 = x + 18$
Step 2 $2x + 6 = 18$
Step 3 $2x = 12$
Step 4 $x = 6$

What operation did he perform to get from Step 1 to Step 2?

A Added x to both sides of the equation
B Divided both sides of the equation by 2
C Multiplied both sides of the equation by 2
D Subtracted x from both sides of the equation

5. Solve the equation $-3(5+2a) + 4 = 5a$ for a.

$-15 - 6a + 4 = 5a$
$-6a - 11 = 5a$
$+6a \quad +6a$
$-11 = 11a$
$\frac{-11}{11} = \frac{11a}{11}$
$\boxed{-1 = a}$

6. Solve the following equation for y:

$2x - 3y = 9$
$-2x \quad -2x$
$\frac{-3y}{-3} = \frac{9-2x}{-3}$
$\boxed{y = \frac{9-2x}{-3}}$

7. Jeff receives 7% commission for every home he sells. If he received \$9800 in commission for the last home he sold, what was the selling price of that home?

$\frac{.07x}{.07} = \frac{9800}{.07}$
$\boxed{x = \$140{,}000}$

8. Write an expression equivalent to the product of five and a numbered squared.

$5x^2$

9. Evaluate $\frac{6a - b^2}{c}$ for $a = \frac{1}{2}$, $b = -1$, and $c = 8$

$\frac{6\left(\frac{1}{2}\right) - (-1)^2}{8}$
$= \frac{3-1}{8} = \frac{2}{8} = \boxed{\frac{1}{4}}$

10. Solve the equation $\frac{3}{4}k - 5 = 10$ for k.

$+5 \quad +5$
$\frac{4}{3} \cdot \frac{3}{4}k = 15 \cdot \frac{4}{3}$
$\boxed{k = 20}$

11. The formula for the circumference of a circle is $C = 2\pi r$. Solve the formula for r.

$\frac{C}{2\pi} = \frac{2\pi r}{2\pi}$

$\boxed{r = \frac{C}{2\pi}}$

12. Solve $d = \frac{1}{2}gt^2$ for g

$2 \cdot d = \frac{1}{2}gt^2 \cdot 2$

$\frac{2d}{t^2} = \frac{gt^2}{t^2}$

$\boxed{g = \frac{2d}{t^2}}$

Solve the following equations:

13. $-3(x - 2) = -6$

$-3x + 6 = -6$

$-6 \quad -6$

$\frac{-3x}{-3} = \frac{-12}{-3}$

$\boxed{x = 4}$

14. $2(x - 8) + 3 = 17$

$2x - 16 + 3 = 17$

$2x - 13 = 17$

$+13 \quad +13$

$2x = 30$

$x = 15$

$\boxed{x = 15}$

15. The sum of two consecutive even integers is 26. Find the two integers.

$x + x + 2 = 26$

$2x + 2 = 26$

$-2 \quad -2$

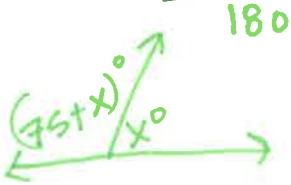
$\frac{2x}{2} = \frac{24}{2}$

$x = 12$

$\boxed{12, 14}$

16. The measure of an angle is 75° more than its supplement. Find the measure of each angle.

180°



$75 + x + x = 180$

$75 + 2x = 180$

$-75 \quad -75$

$\frac{2x}{2} = \frac{105}{2}$

$x = 52.5$

$\boxed{52.5° \quad 127.5°}$

6 tests total

17. Kenny's scores on his last 5 math tests are 85, 92, 81, 92, and 80. What is the score he must get on the next test if he wants his average to be exactly 86?

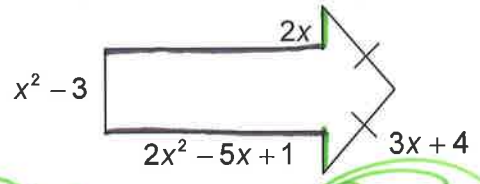
$430 + x = 86(6)$

$430 + x = 516$

$-430 \quad -430$

$\boxed{\text{He needs an 86}}$

18. Find the perimeter, in simplified form, in terms of x.



$2(3x+4) + 2(2x) + 2(2x^2 - 5x + 1) + x^2 - 3$

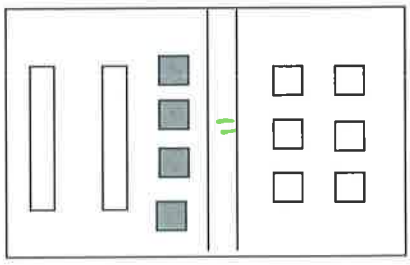
$6x + 8 + 4x + 4x^2 - 10x + 2 + x^2 - 3$

$\boxed{5x^2 + 7}$

19. Write the following algebraic expression. The quantity four less than two times a number, increased by another number squared.

$(2x - 4) + y^2$

20. What equation do the following algebra tiles represent?



$2x - 4 = 6$

21. Draw the solution of the equation in #20 using algebra tiles.