Chapter 3 Test

Algebraic linear equations

Chapter 3 Test
Name _____
Class_____

Ms Angie
Date_____

Show all your work and box your final answer.

1.) $3(x-1) - 8 = 4(1+x) + 5$

2.) $\frac{4x-2}{8} + \frac{3+x}{8} = \frac{1}{2}$

3.) $\frac{2(x+1)}{3} - \frac{x-1}{6} = 1$

Write each decimal as a fraction. Show your work.

4.) $0.\overline{4}$

5.) $0.4\overline{6}$

6.) $0.\overline{32}$

Identify whether each equation has one solution, no solutions, or an infinite number of solutions. Show your work.

7.) $x + \frac{1}{5} = -\frac{1}{4}(20x - 24)$

8.) $4x + 5 = 2x - 7$

9.) $3\left(x + \frac{1}{2}\right) = 3\left(x + \frac{4}{5}\right)$

10.) $2x + 4 = -2\left(\frac{1}{2} - x\right)$

Solve for y in terms of x. Find why when x = 3.

11.) $0.25y = \frac{2}{x-6}$

12.) $\frac{1}{3}y = 6\left(x - \frac{1}{6}\right)$

13.) Carter has 3 statues of various sizes in his garden. Statue A is one foot taller than Statue B. Statue C is one-half of a foot taller than Statue B.

a. Let x represent the height of Statue B. Write an equation to find the total combined height, *h,* of Statues A and C.

b.) If the total combined heights of the 3 statues is 10 feet, find the height of Statue B in inches.

14.) Wesley subscribes to a telecommunication company's movie package. The plan includes a basic monthly charge of $40 and an additional charge of $1.50 for every movie ordered.

a.) Write an equation for the total charge for a month, *C*, in terms of the number of movies, *m*, Wesley orders per month.

b.) If Wesley ordered 4 movies one month, what was his total charge for the month?

15.) Jamie rents a photocopier from a company that charges $20 each month and $0.02 for each copy.

a.) Write a linear equation for the monthly charges, *C* charges in terms of the number of copies, *n*.

b.) Calculate the number of copies Jamie was charged for if her monthly bill was $56.

BONUS) A jewelry shop is offering a percent discount on the original price of a jade pendant. The original price of the pendant was $200.

a.) Let d represent the percent discount, written as a decimal. Write an equation to find the discount price, *y* dollars of the pendant.

b.) Create a table of *d* and *y* values using the equation from **a)** for *d* = 4%, 8%, and 10%