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Chapter 5 Review Questions

1. A coefficient is a value that multiples a variable. Example: if the letter *a* is the variable and 3 were the coefficient then 3*a* or 3**a*.
   A constant is a value that doesn't change in relation to variables.
   A variable act as a placeholder for an unknown value, normally represented by a letter, that maybe used for solution.
   An equation is two or more terms connected via an equal sign that represent a true statement.

2. The dependent variable will change value depending on the value of an independent variable such as $y=2x-3$, depending on which value is substitute for x the result of y must still represent a true statement.

3. Adding, Subtracting, Multiplying, Dividing, Raising, Taking and exchanging are all actions that can be performed to an equation granting they are done equally on both sides of the equal sign.

4. Solving an equation is to find all of the possible values of the variables that make the equation a true statement.

5. An equation is considered to be linear if all possible value substitutions to the Independent Variable result in a straight line within the Cartesian plane, with respect to the Dependant Variable.

6. First solve for the variable, draw a perpendicular coordinate system, set the intersecting point of the axes as the origin, draw lines with equal spacing across both axes then give them numeric values according to their distance from the origin. Let the variable be one of the axes and go to the corresponding value of that variable in its axis. Draw a line perpendicular through that value infinitely in both directions, this line represents the equation.

7. There is no explicit solution to a single linear equation with 2 variables.

8. First rule out any exclusions to the value of the Variable as an Independent, then solve for the Independent (get that variable alone). The Variable formally known as Dependant now becomes dependant and vice-versa.

9. When translating a word problem into an equation the first step is to assign a variable to the unknown values, figure out the outcome you want to derive to (desired goal) decide what input values are necessary to achieve the output needed, translate the words in the initial problem into the appropriate arithmetic operators and use them to connect the variables and constants together into an equation.

10. Percent represents parts per hundred. Example: *a* is *b* percent of *c* or 25 is 25% of 100.

11. Answer 10 (above) equates to: $a=(b/100)*c$

12. With percentage change factor being *f*, initial value being v_1 and the non-initial value being v_2. Two equations can be used to solve the percentage change: $f=v_2/v_1$ and $c=(f-1)*100$ *c* would represent the percentage change.

13. An easy way to see if percent change will be positive or negative is to evaluate the to values v_1 and v_2 (see previous question). If $v_1>v_2$ then *c* will be a decrease (resulting in a negative *f*) but if $v_1<v_2$ then *c* will have increased (resulting in a positive *f*).

14. The numerator for *f* (see question 12) will always be the non-initial value (v_2).

15. The value of *f* (see question 12) always represents the change ratio of the initial value (v_1).

16. A percent represents parts per hundred. A proportion is a ratio comparative to a whole.