

# Math 10 Chp 8 Reference/Review

Note Title

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**System of Equations** - two or more equations with common variables. **Note: linear is left out.**

**Point of Intersection** - a point where equations join.

**Solution** - a point where **ALL** given equations join.

**Solving from tables** - simply find matching y-values if the tables are aligned.

Line 1

Line 2

x	L1	L2
-4	-13	12
-3	-10	10
-2	-7	8
-1	-4	6
0	-1	4
1	2	2
2	5	0
3	8	-2
4	11	-4

Solution: (1, 2)

If the tables are unaligned, you must find matching points.

x	L1	x	L2
-4	11	-2	-3
-3	10	-1	-1
-2	9	0	1
-1	8	1	3
0	7	2	5
1	6	3	7
2	5	4	9
3	4	5	11
4	3	6	13

Solution: (2, 5)

Tables do not always find solutions! For instance if you use integers for the independent variable and solution is a decimal value, you will miss the solution!

**Checking Solutions** - substitute the point into **ALL** given equations. All must be true for a valid solution.

**Modelling Equations Tips** - the clues are in the **units and words**

You can see the independent (**horizontal**) and dependent (**vertical**) variables. The slope is rise/run.

When you read a word problem, the sentences give you clues about the independent/dependent variables by finding the slope.

Don't overgeneralize, but 'per', 'each', 'in' usually means divide which gives us the slope.

Other math synonyms - again, don't over-generalize!  
Add - sum, total, increase, gain, more, plus, tally, above

Subtract - difference, decrease, reduce, deduct, discount, less, take away, lose, below

Equals - is, will be, was, are

Multiply - times, scale, magnify, of, product

Divide - per, each, portion, partition, group, divvy, quotient

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To determine the number of solutions algebraically, we need to put all the equations in the same form.

- different slopes - one sol'n
  - same slope / same intercepts -  $\infty$  sol'ns
  - same slope / different intercepts - zero sol'ns
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Strategies:

- 1) Make equations if not given any.
- 2) You will need 2 variables - an independent and dependent. Some problems look like they have 4 variables with dollars being the third and units being the fourth. But these are just the constant terms for the equations.  
eg) There are 50 hats and shirts sold in a day. Hats are \$15 and shirts are \$20. Total sales were \$840. How much of each were sold?  
 $h + s = 50$   
 $15h + 20s = 840$   
A & B coefficients
- 3) Find solution by graphing, table of values, or algebra unless you are told to do it a certain way.