*Match the words or phrases (a to i) with the best definition (1 – 8).  One term will not be used.*

a. linear system
b. equivalent linear systems
c. method of substitution
d. slope
e. point of intersection (solution)

f. equivalent linear equations
g. graph
h. intercept
i. method of elimination

____  1.  Where two lines meet
____  2.  Consists of at least two lines
____  3.  The point where a relation crosses the $x$- or $y$-axis
____  4.  Two linear systems that have the same solutions
____  5.  A method of solving a system in which one variable is replaced
____  6.  This is equal for two lines that are parallel
____  7.  When two linear equations are added or subtracted to solve a linear system
____  8.  When two linear equations that have the same graph

9.  ***GRAPH PAPER REQUIRED:***

Find the point of intersection of the lines $y = -\frac{5}{2}x$ and $y = -x + 3$ **by graphing** the system.

10.  ***GRAPH PAPER REQUIRED:*** Monique's swimming pool filter needs repair.
She calls two companies for prices.  The Pool BoyZ charge $70 for a service call and $40/h for labour.
KemiKal Balance charge $50 for a service call and $50/h for labour.
   a) Let $C$ be the total charge and let $h$ be the number of hours of labour.
      Create a linear system to model the choices she has.
   b) **Graphically** determine the solution. [HINT: count by 1's for $h$ count by 10's for $C$].
   c) Interpret the solution.
   d) If the repair takes 2.5 h, which company should she select?

11.  Solve this linear system using the method of substitution, then show a "proper check" for your solution.
$$2(x-4)+y=6$$
$$3x-2(y-3)=13$$

***ALL REMAINING QUESTIONS, FOR FULL MARKS, MUST BE SOLVED USING A LINEAR SYSTEM.***

12.  One metal alloy is 25% copper, while another is 50% copper.
How much of each alloy should be used to make 1500 g of a metal alloy that is 40% copper?

13.  Chris needs to make 500 L of a 35% acidic solution.  He has only two of the acidic solutions available,
a 25% solution and a 50% solution.  How many litres of each acidic solution should he mix?

14.  A houseboat on the Trent river system travelled 48 km upstream (against the current) in 6 h.
It only took the houseboat 4 h to make the same trip downstream (with the current).
(a) How fast would the houseboat have travelled in still water?
(b) How fast was the river's current?

15.  A salmon fishing boat on a BC river travelled upstream in 4 h.
Returning downstream at the same speed, it took 3 h.  The distance was 72 km each way.
(a) Find the speed of the fishing boat in still water.
(b) Find the speed of the river's current.

☺ **NOW RE-DO YOUR UNIT 1 UNIT TEST.**
**DO NOT PROCEED TO UNIT 2 UNTIL YOU KNOW HOW TO DO EVERY QUESTION.** ☺