1. Solve the following equations: **(7M)**

   a. Solve for *x* and verify $3x-6=x+4$

   b. Solve for *x*: $3(2x-3)+5=10-x$

2. From 1995 to 2008, the number of Toyota dealerships in the Philippines increased by 12 shops per year. In 1999, there were 56 dealerships. **(10M)**

   a. Write a linear equation for the number of dealerships, *y*, as a function of time, *t*, where $t = 0$ represents the year 1995.

   b. Prepare a graph of the linear relation on the grid provided.

   c. Based upon your linear model from part (a), predict the number of dealerships that will be in that country in 2020. What assumption are you making.

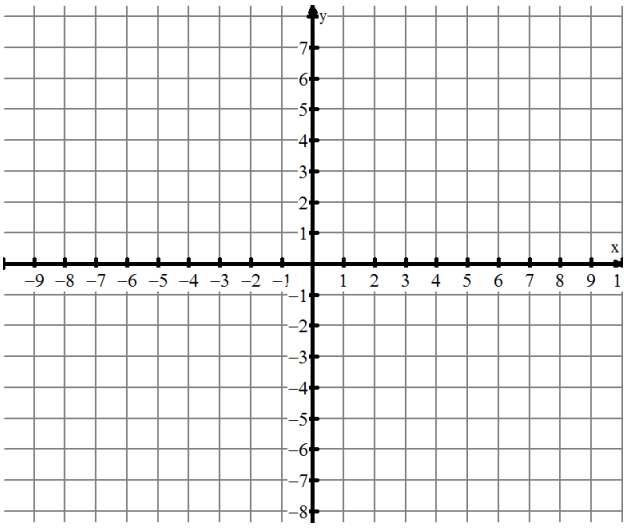
   d. Likewise, the number of Nissan dealerships has been growing at a rate of 8 shops per year since 1995. In 1999, Nissan had 72 dealerships across the Philippines. Write the equation of the linear model for Nissan and graph the linear relation for Nissan on the same grid as Question 2b.

   e. Where do the two linear models intersect and what does the intersection point mean in the context of this question?

3. Use the grids below to graph the 2 lines. Use the graphs to then determine where the two lines intersect. State the appropriate conclusion after all the work has been completed. **(10M)**

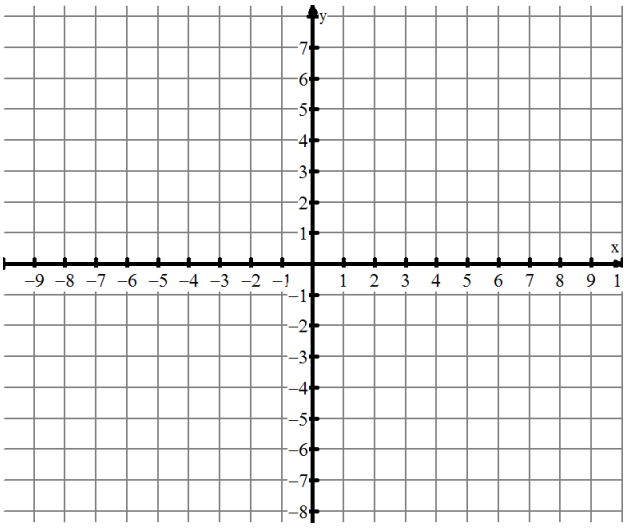
(a) $y = -x + 2$

$y = \frac{1}{2}x + 5$



(b) $y = 2x + 6$

$y = \frac{2}{3}x + 2$



4. Solve the following linear system using the substitution method. Show all your work and state the appropriate conclusion after all the work has been completed. **(7M)**

$3x - 4y = 9$

$2x - y = 6$

Graph for Question #2