

**▮ homework check: All in the Family Assignment****▮ note: Interpreting Solutions of Linear Relations**

The solution to a linear equation is the x or y coordinate of the point that lies on the corresponding line. It is possible to estimate the solution from the graph using interpolation or extrapolation. To find the exact solution, we use algebraic manipulation. It is also possible to check any solution by substituting the value found into the original using a left side, right side check. If the solutions are equal, the solution is correct. For example,

- a) Lynne grooms dogs daily as her main source of income. The service costs \$10 an hour plus \$20 for shampoo and supplies.

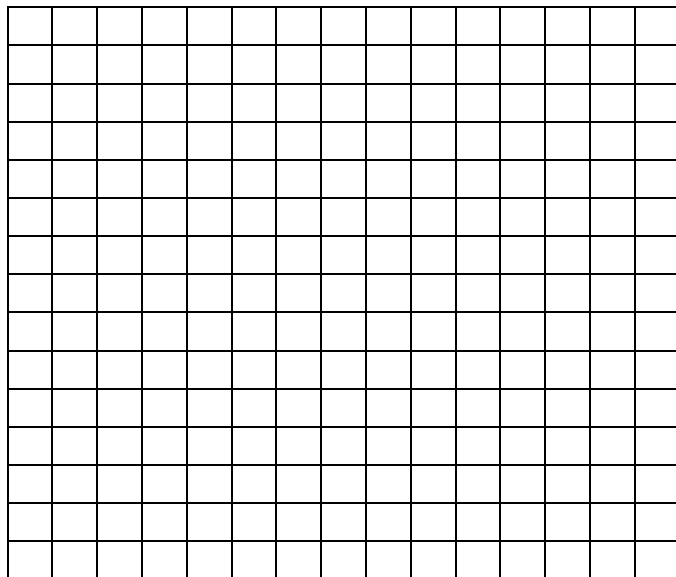
i) Create a linear relation that models Lynne's income in terms of time.

$I$  represents Lynne's income

$t$  represents the time

$$I = 10t + 20$$

ii) Graph the linear relation for one complete work week of 40 hours.



iii) Use the graph to estimate the cost for a 7 hour grooming session.

$$\text{cost} = \$90$$

iv) Use a formal method to check your solution in part iii).

$$\begin{aligned} LS &= \$90 & RS &= 10(7) + 20 \\ & & &= \$90 \end{aligned}$$

v) Use the graph to estimate how many hours of grooming costs \$350.  
*time = 33hours*

vi) Use a formal method to check your solution to part v).

$$\begin{aligned} LS &= \$350 & RS &= 10(33) + 20 \\ & & &= \$350 \end{aligned}$$

**■ homework assignment: NPM 9 p. 201 # 1 – 3, 9, 10, 13, 15 - 17**