

pg326 #6 Solution Notes

Step 1 - First, write let statements and generate equations.

f = the number of pairs of figure skates

h = the number of pairs of hockey skates

Step 2 - Then, calculate x and y intercepts for graphing.

Handwritten solution notes on graph paper showing the steps to find the x and y intercepts for a system of linear equations.

Equations:

$$\begin{aligned} \textcircled{1} \quad & 3f + 2.5h = 240 \\ \textcircled{2} \quad & f + h = 94 \end{aligned}$$

Let statements:

$$(x, y) = (f, h)$$

Intercepts for Equation 2:

$$\textcircled{2} \quad \begin{aligned} f = 0, h = 94 \\ (0, 94) \\ (94, 0) \end{aligned}$$

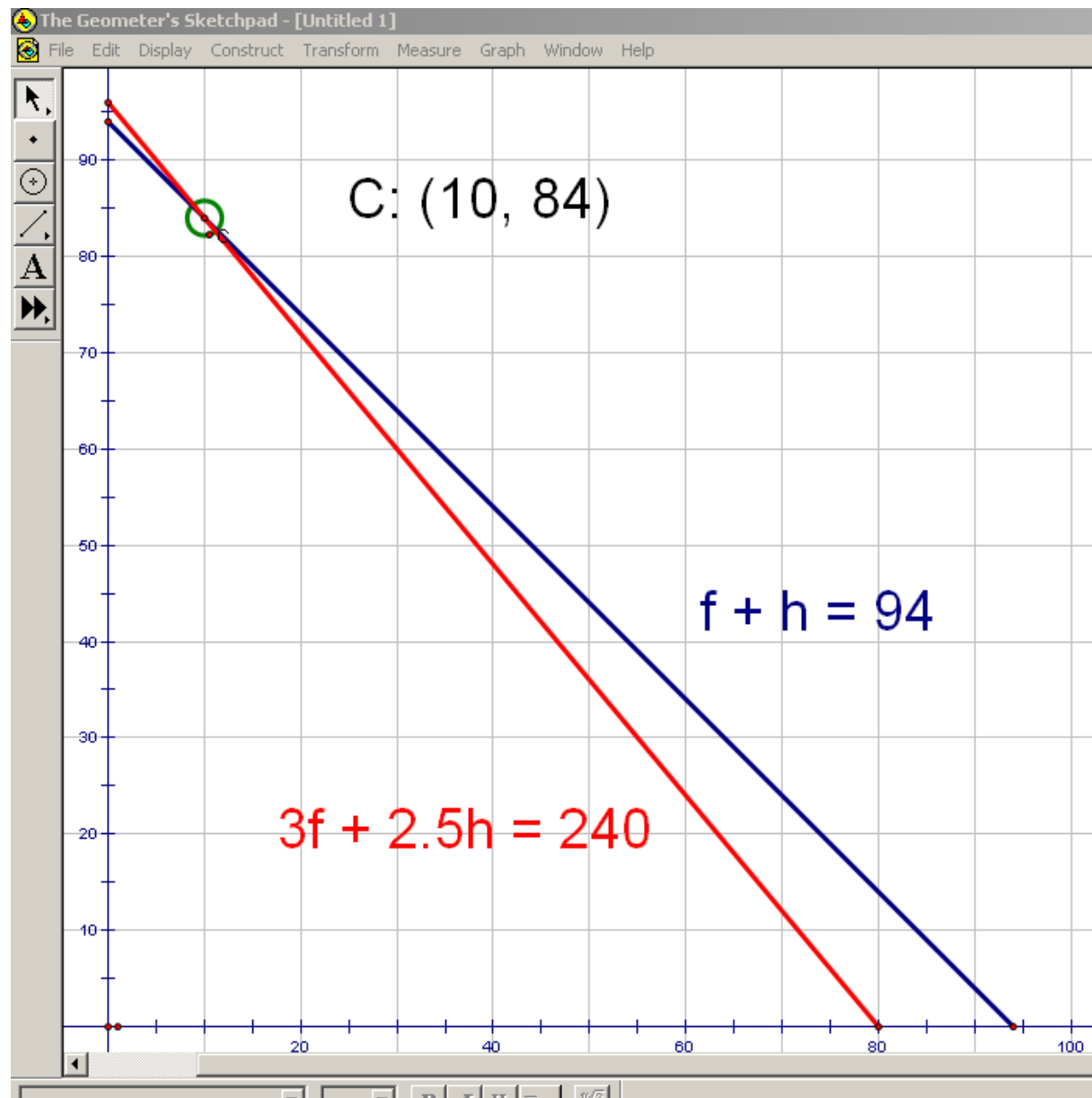
Intercepts for Equation 1:

$$\textcircled{1} \quad \begin{aligned} f = 0 \\ 3(0) + 2.5h = 240 \\ 2.5h = 240 \\ h = \frac{240}{2.5} \\ h = 96 \\ (0, 96) \end{aligned}$$

Intercepts for Equation 2 (continued):

$$\textcircled{2} \quad \begin{aligned} h = 0 \\ 3f + 2.5(0) = 240 \\ 3f = 240 \\ f = \frac{240}{3} \\ f = 80 \\ (80, 0) \end{aligned}$$

Step 3 - Next, graph both on same axes and find the point of intersection.



Step 4 - Next, check POI (10, 84) to prove that it is the solution and write conclusion.

(f, h)

Check $(10, 84) :$

① $3f + 2.5h = 240$

$$\begin{aligned} \text{LS} &= 3(10) + 2.5(84) & \text{RS} &= 240 \\ &= 30 + 210 \\ &= 240 & \text{LS} &= \text{RS} \end{aligned}$$

② $f + h = 94$

$$\begin{aligned} \text{LS} &= 10 + 84 & \text{RS} &= 94 \\ &= 94 & \text{LS} &= \text{RS} \end{aligned}$$

∴ Henri sharpens 10 figure skates and 84 hockey skates.