

## Unit 2 Review

1. 6 and 5 or -6 and -5
2. see graph paper [C]  
For detailed explanation
3. see graph paper [D]  
For detailed response
4. see graph paper [B]  
for detailed response
5.  $C(x)$  is  $y$ , so  $y = 0.25x + 30$  and  
 $P(x)$  is  $y$ , so  $y = 1.00x$   
\* Use substitution because you know  $y$ !

$$\begin{array}{r} 1x = 0.25x + 30 \\ - 0.25x - 0.25x \\ \hline 0.75x = 30 \\ \underline{0.75} \quad \underline{0.75} \end{array}$$

$$x = 40 \text{ cupcakes}$$

- b.  $x = \text{adult ticket} = 7$   
 $y = \text{student ticket} = 4.50$

$$7x + 4.5y = 2009$$

$$y = 3x$$

\* Substitution because you know  $y$

$$7x + 4.5(3x) = 2009$$

$$7x + 13.5x = 2009$$

$$\frac{20.5x}{20.5} = \frac{2009}{20.5}$$

$$x = 98 - \text{each adult ticket costs } 7.50 \quad 98 \times 7 = 686 \rightarrow$$

$$\begin{array}{r} 4x - 2y = -2 \\ -4x \phantom{-2y} \\ \hline \end{array}$$

$$\begin{array}{r} -2y = -4x - 2 \\ -2 \phantom{-4x} \\ \hline \end{array}$$

$$y = 2x + 1$$

H6 cont.

- Next, subtract  $2009 - 686 = 1323$  (this is how much was made in student sales).

- Each student ticket costs 4.5, so  $1323 \div 4.5 =$

$$\boxed{294}$$

7. See graph paper - answers will vary - possible answers are:  $(-3, -2)$  and  $(-5, 0)$

8. Answers will vary - Possible answer:

$$y = 2x + 1 \text{ and } 4x - 2y = -2.$$

- I know there are infinitely many solutions because the lines coincide and will overlap forever.

9. a)  $x + y \leq 10$  and  $20x + 10y \leq 100$

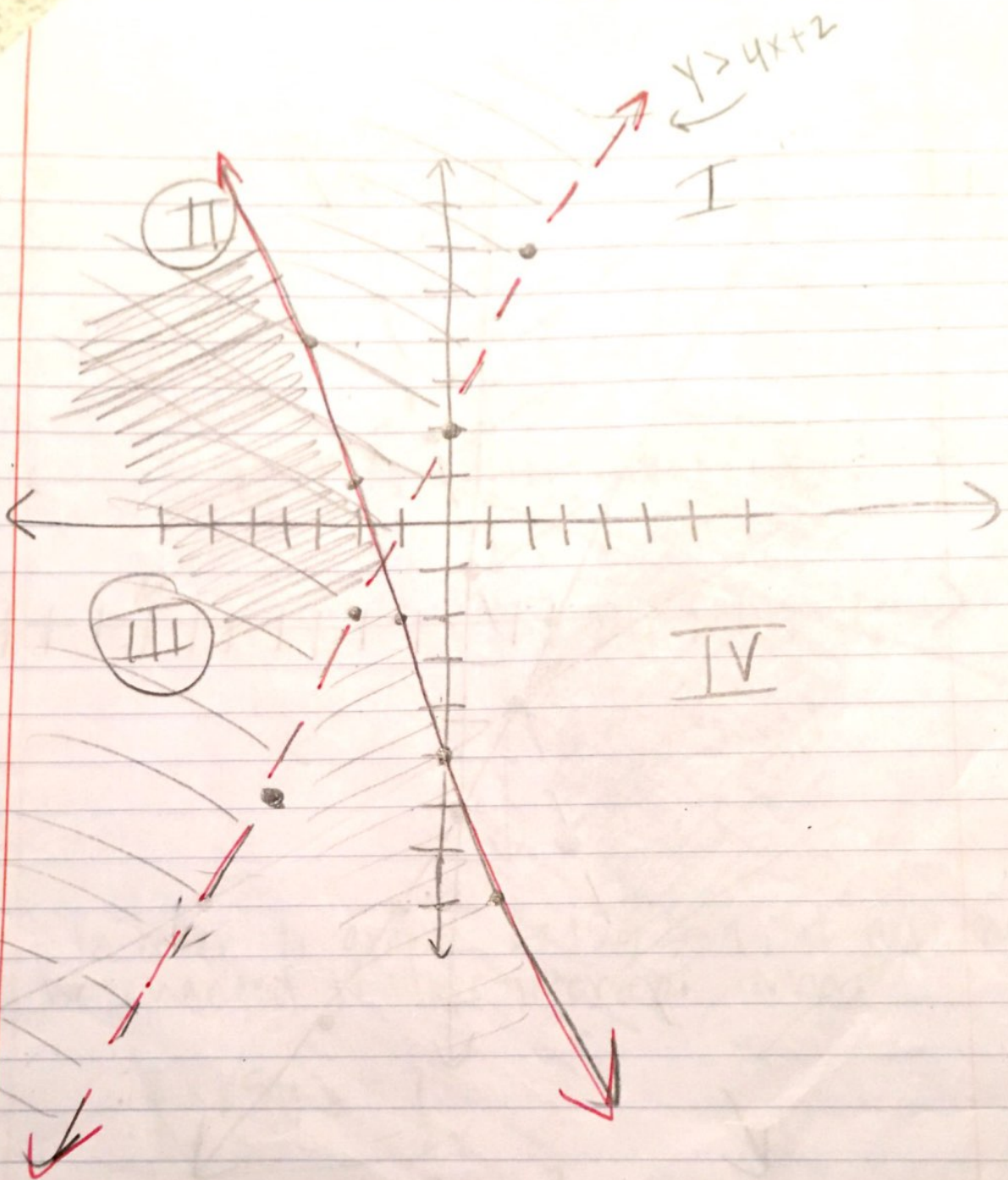
b) NO, if Paul buys 6 flagpoles and 5 flags he exceeds the 10 total he can buy. This also exceeds the \$100 he has to spend.

10.  $6x + y = 9$   
 $4x + 2y = 10$

$$\begin{array}{r} 6x + y = 9 \\ -4x \phantom{+ y} \\ \hline \end{array}$$

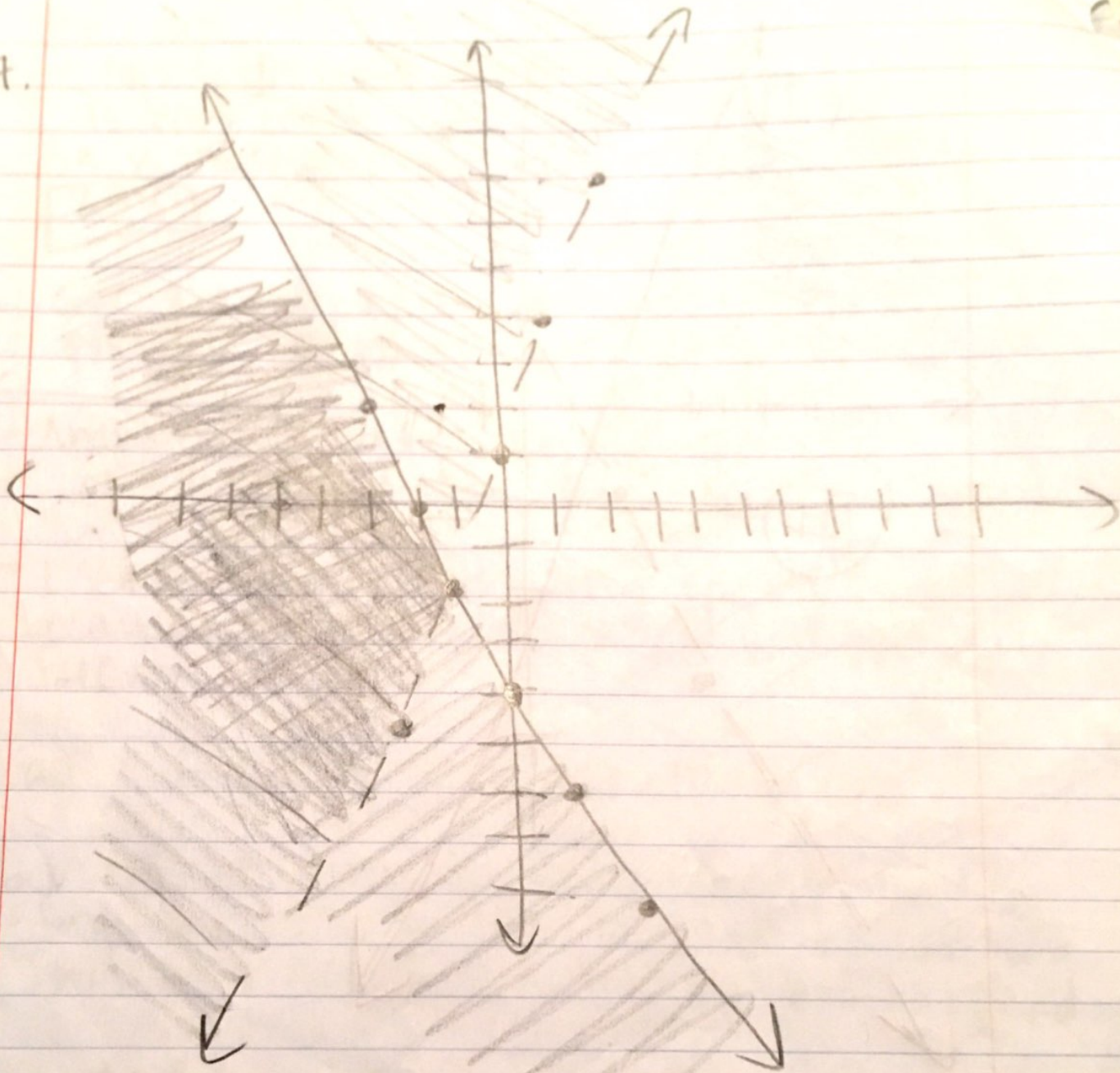
Ans:  $\boxed{y = -6x + 9}$

4.

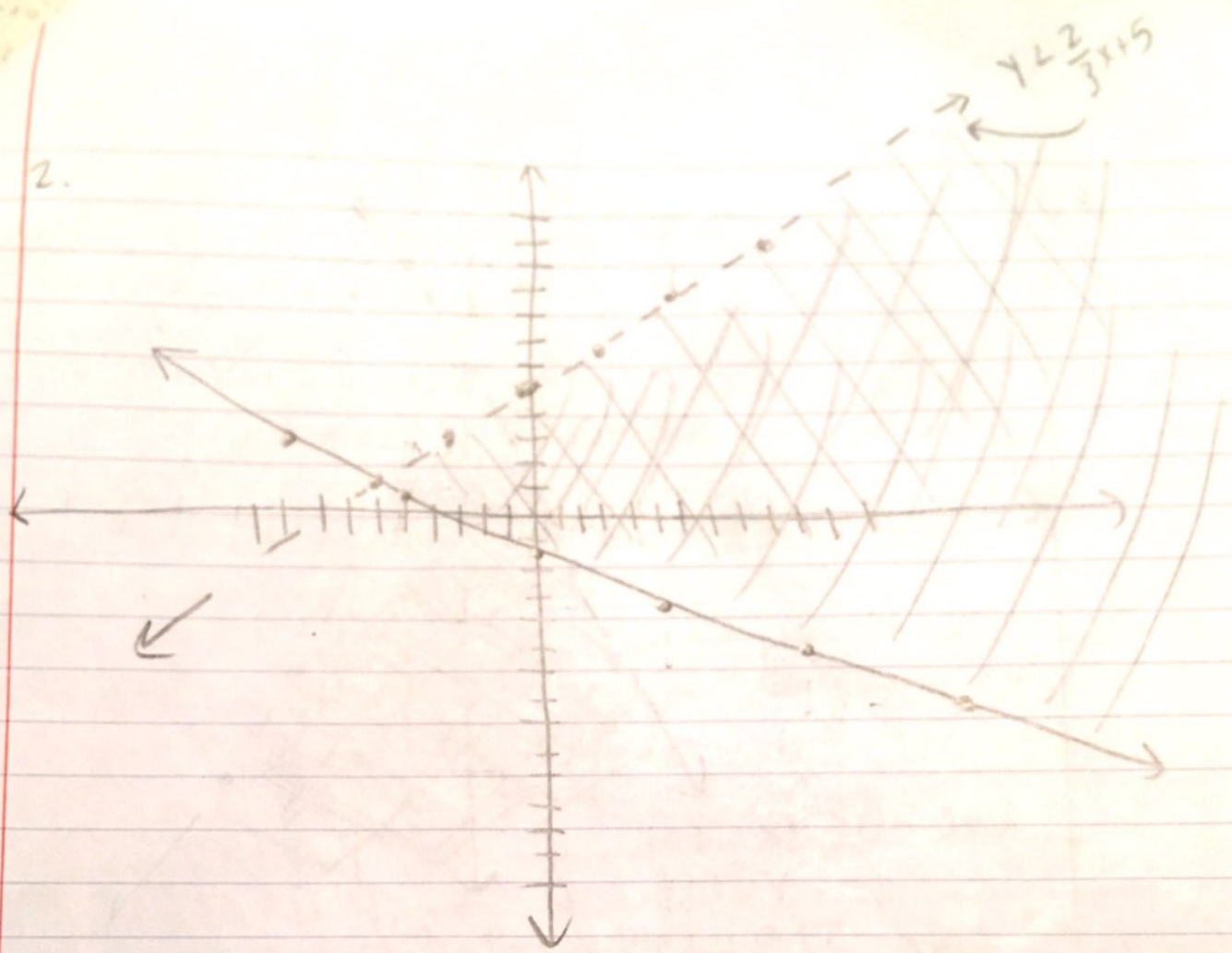


\* Shaded part only falls in quadrants II and III. **B**

7.



**Ans:** - Any points that fall where the shaded areas overlap could be solutions

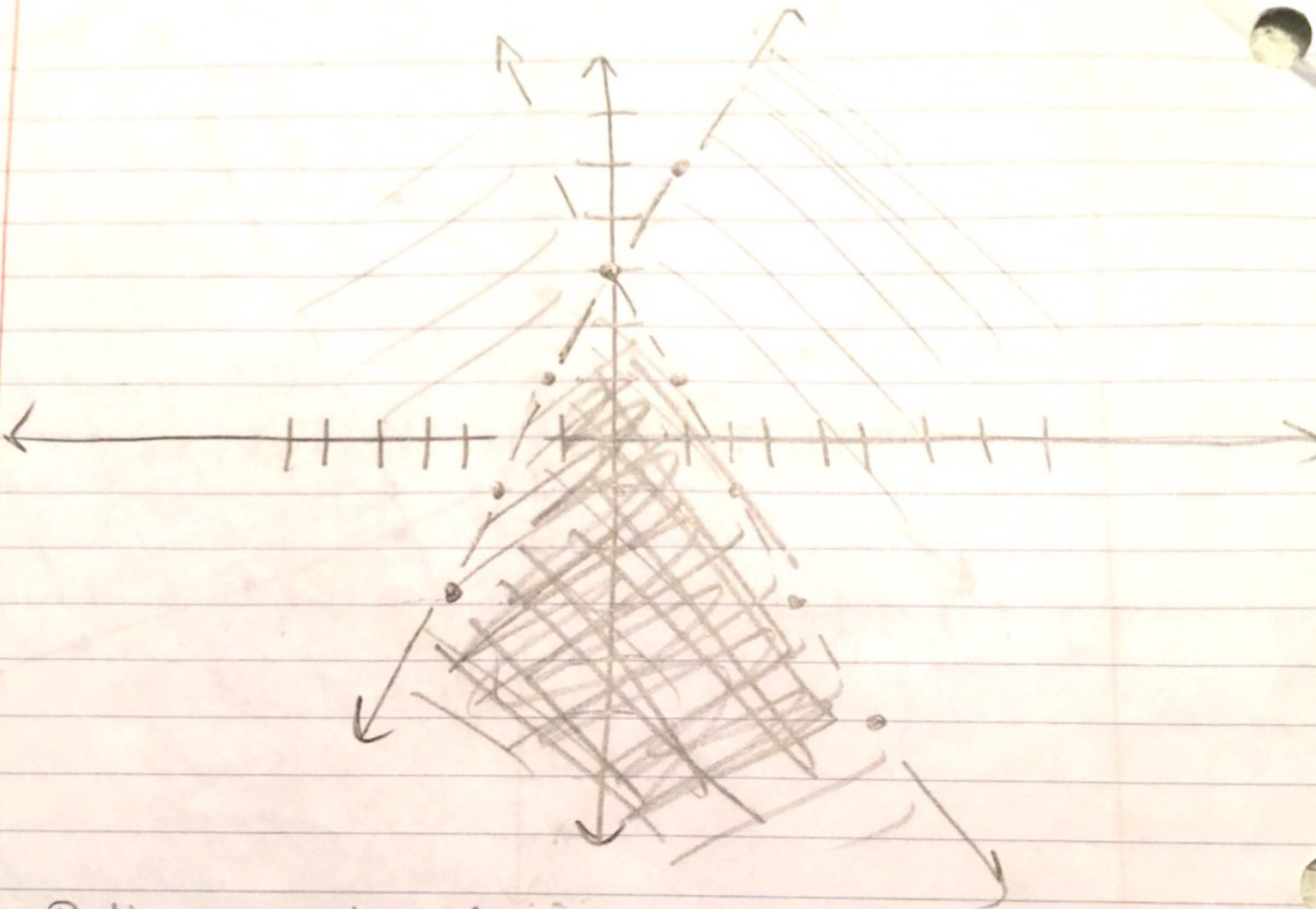


- In order to graph  $2x + 5y \geq -7$ , it first needs to be changed to slope-intercept form.

$$\begin{array}{r}
 2x + 5y \geq -7 \\
 -2x \quad -2x \\
 \hline
 5y \geq \frac{-2x - 7}{5} \\
 \frac{5y}{5} \geq \frac{-2x - 7}{5} \\
 y \geq -\frac{2}{5}x - \frac{7}{5} \quad \frac{7}{5} = 1.4
 \end{array}$$

- answer is **(C)** (5, 3) because those are the only pair of points that fall within the shaded region.

3.



- Both are already in slope intercept, so can be graphed. Shade down because  $<$ .  
 $\boxed{D}$   $(0, -1)$  only points within shaded area.