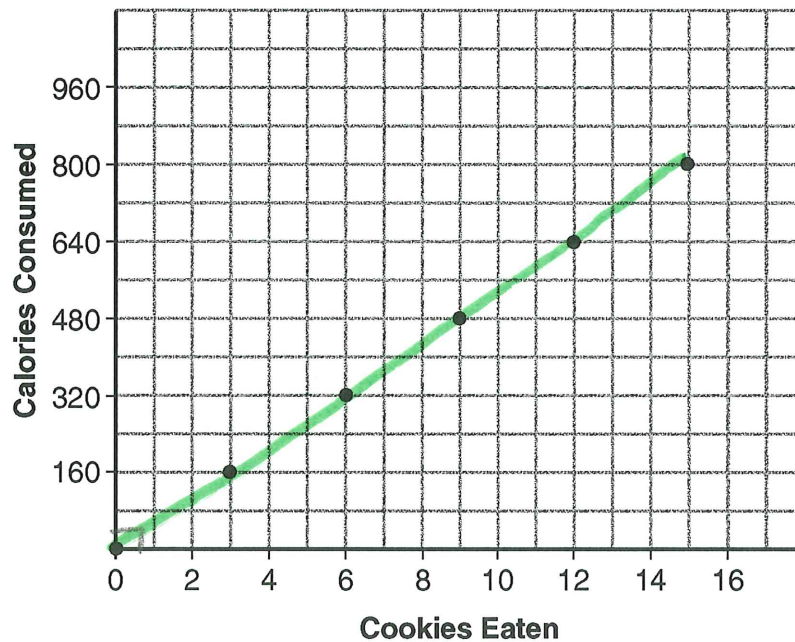


- 29 Samantha purchases a package of sugar cookies. The nutrition label states that each serving size of 3 cookies contains 160 Calories. Samantha creates the graph below showing the number of cookies eaten and the number of Calories consumed.



Explain why it is appropriate for Samantha to draw a line through the points on the graph.

She can draw a line through the points

because she can eat half a cookie, 1 cookie, or ~~2~~ 2 cookies and be consuming the matching number of calories (40, 80, 160 calories). She doesn't have to eat only 3, 6, 9, 12, etc. cookies.

30 A two-inch-long grasshopper can jump a horizontal distance of 40 inches. An athlete, who is five feet nine, wants to cover a distance of one mile by jumping. If this person could jump at the same ratio of body-length to jump-length as the grasshopper, determine, to the nearest jump, how many jumps it would take this athlete to jump one mile.

Grasshopper ← Given info: → Athlete

2 in

can jump
40 in

Athlete

5 ft. 9 in.

$\times 12$

60 in + 9 in

69 in

wants to jump

1 mile

↓

5280 ft.

$\times 12$

63,360 in.

↓

* use reference sheet

height
one jump

Grasshopper Athlete
2 in = 69 in height
40 in = x one jump

$$\frac{2x}{2} = \frac{2760}{2}$$

$$x = 1380 \text{ in}$$

(one jump of athlete)

$$63360 \div 1380 = 45.9$$

jumps

↓

46 jumps

* Answer: *

This athlete needs 46 jumps to jump 1 mile

→ isolate y in each inequality

35 Solve the following system of inequalities graphically on the grid below and label the solution S.

$$\begin{array}{r} 3x + 4y > 20 \\ -3x \\ \hline 4y > 20 - 3x \end{array}$$

$$\begin{array}{l} 3x + 4y > 20 \\ x < 3y - 18 \end{array}$$

$$\begin{array}{r} x < 3y - 18 \\ +18 \\ \hline x + 18 < 3y \end{array}$$

$$y > 5 - \frac{3}{4}x$$

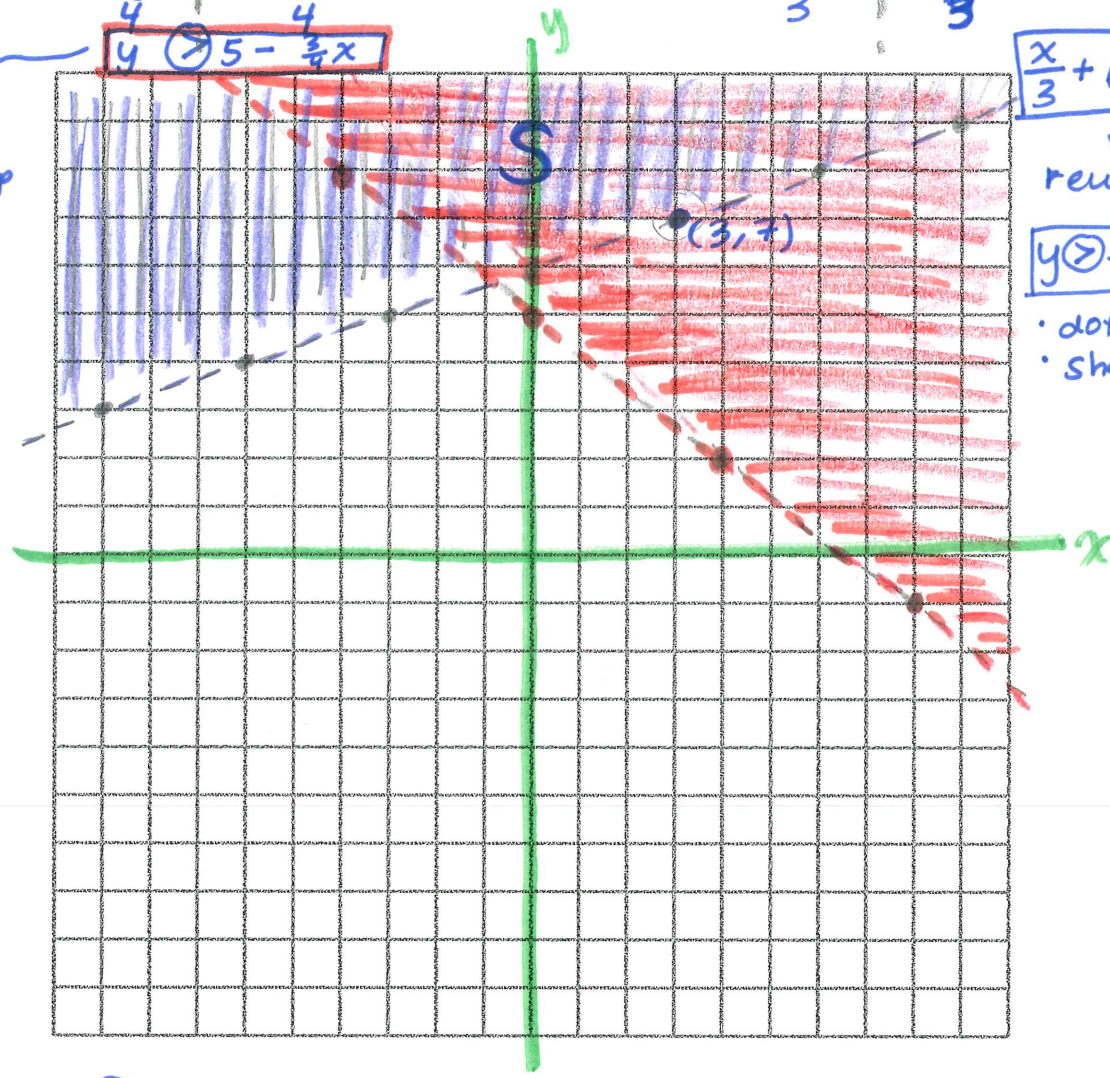
$$\frac{x}{3} + 6 < y$$

↓
rewrite

$$y > \frac{x}{3} + 6$$

• dotted
• shade up

• dotted
• shade up



Is the point $(3, 7)$ in the solution set? Explain your answer.

No it is not in the solution set because $(3, 7)$ falls on the dotted line of one ~~function~~ ^{inequality} which means it is not included in that solution set.
(The point has to be in both solutions of inequalities to be a solution to the system.)