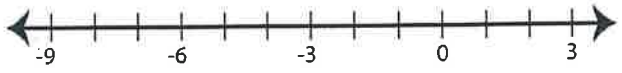
Name : _____ (21 pts) 2.4 HW Score : _____

Solving & Graphing Inequalities

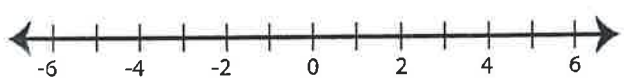
Solve each problem and graph the solutions.

1) $-6 < \frac{2x-4}{3} < -2$

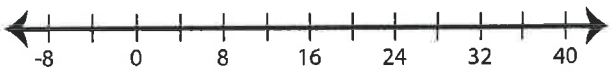


2) $2(5x-13) \le 4$ or $72 \ge 3(2x+6)$

3) $\frac{3x+4}{2} > -1$ and $5 > \frac{8x+7}{3}$

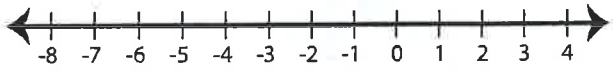


4) $8 > \frac{3x-8}{5} \ge -4$

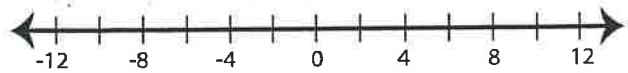


5) $3(2x-15) \ge -9$ or $-19 \le \frac{x}{5} - 4x$

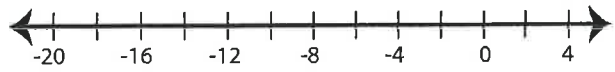
6) $4(6x+10) < -56$ and $2(-9-8x) \ge 30$



7) $-3 < \frac{x}{2} + x$ and $42 > 2(6x+9)$



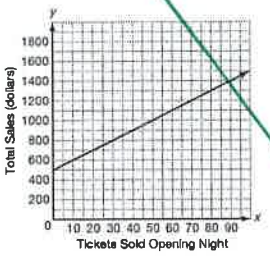
8) $2(3x+28) < -16$ or $\frac{5x-31}{7} \ge -3$



Use the graph to write an equation or inequality to determine the number of laptop computers Carlos would need to sell to earn each amount.

1. at least $10,000
2. less than $7000
3. less than $8000
4. at least $9000
5. more than $12,000
6. exactly $8000

[illegible] at the ticket booth of a local playhouse. On the opening night of the play, tickets are $10 each. The playhouse has already sold $500 worth of tickets during a presale. The function $f(x) = 10x + 500$ represents the total sales as a function of tickets sold on opening night.



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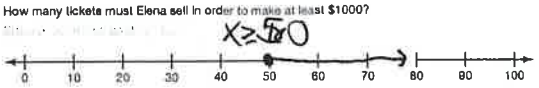
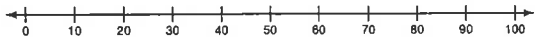
Use the graph of the function to answer each question. Graph each solution on the number line.

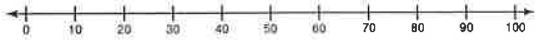
7. How many tickets must Elena sell in order to make at least $1000?



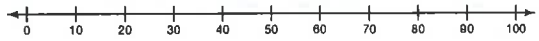
8. How many tickets must Elena sell in order to make less than $800?



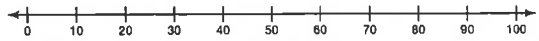
9. How many tickets must Elena sell in order to make at least $1200?



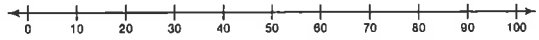
10. How many tickets must Elena sell in order to make exactly $1400?



11. How many tickets must Elena sell in order to make less than $600?



12. How many tickets must Elena sell in order to make exactly $900?



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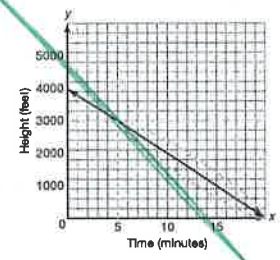
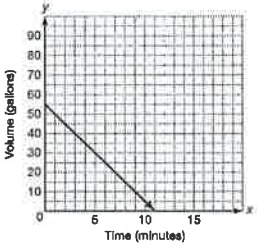
[illegible] oval on the graph to represent the solution to each question. Write the corresponding inequality statement.

[illegible] balloon at 4000 feet begins its descent. It descends at a rate of 200 feet per minute. The function $f(x) = -200x + 4000$ represents the height of the balloon as it descends. How many minutes have passed if the balloon is below 3000 feet?



[illegible] more than 5 minutes have passed if the balloon is below 3000 feet
$x > 5$

20. A bathtub filled with 55 gallons of water is drained. The water drains at a rate of 5 gallons per minute. The function $f(x) = -5x + 55$ represents the volume of water in the tub as it drains. How many minutes have passed if the tub still has more than 20 gallons of water remaining in it?



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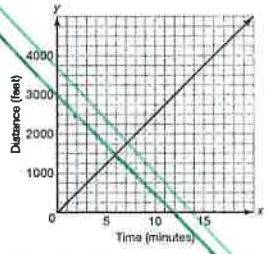
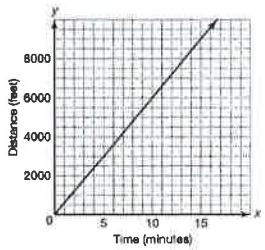
21. Lea is walking to school at a rate of 250 feet per minute. Her school is 5000 feet from her home. The function $f(x) = 250x$ represents the distance Lea walks. How many minutes have passed if Lea still has more than 2000 feet to walk?



22. Franco is riding his bike to school at a rate of 600 feet per minute. His school is 9000 feet from his home. The function $f(x) = 600x$ represents the distance Franco rides. How many minutes have passed if Franco has less than 3000 feet left to ride?



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