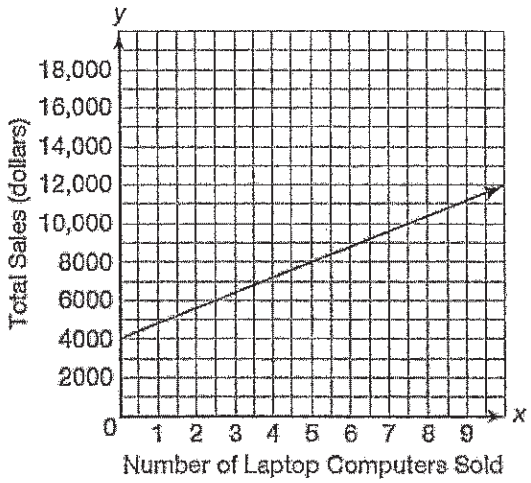
LESSON 2-K Skills Practice Name_____hr____

Carlos works at an electronics store selling computer equipment. He can earn a bonus if he sells $10,000 worth of computer equipment this month. So far this month, he has sold $4000 worth of computer equipment. He hopes to sell additional laptop computers for $800 each to reach his goal. The function $f(x) = 800x + 4000$ represents Carlos's total sales as a function of the number of laptop computers he sells.

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

$x \geq 8$

2. less than $7000

$x \leq 3$

3. less than $6000

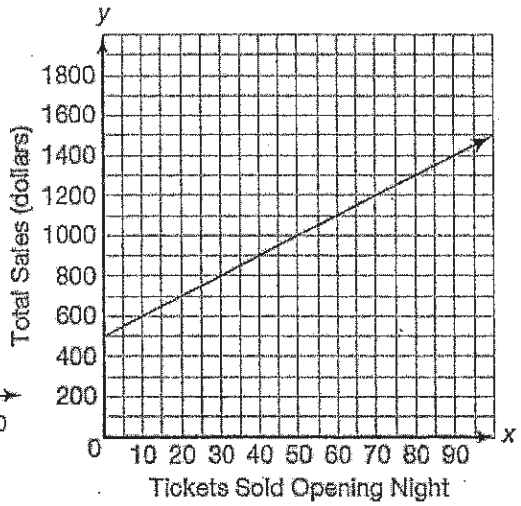
$x \leq 2$

4. more than $12,000

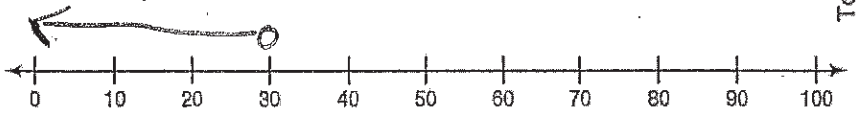
$x > 18$

Elena works 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.

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

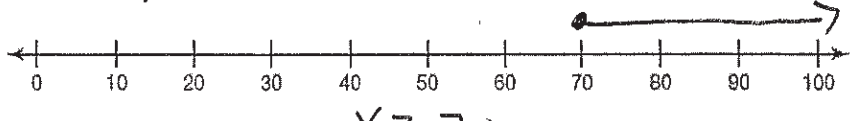


5. How many tickets must Elena sell in order to make less than $800?



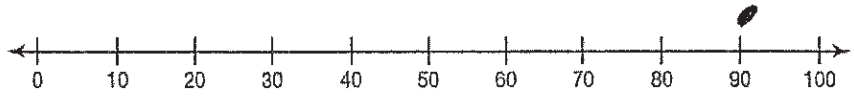
$x < 30$

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



$x \geq 70$

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



$x = 9$

Leon plays on the varsity basketball team. So far this season he has scored a total of 52 points. He scores an average of 13 points per game. The function $f(x) = 13x + 52$ represents the total number of points Leon will score this season.

Write and solve an inequality to answer each question.

8. How many games must Leon play in order to score fewer than 182 points?

$13x + 52 < 182$ He must play in less than 10 games to score fewer than 182 points.

$13x < 130$

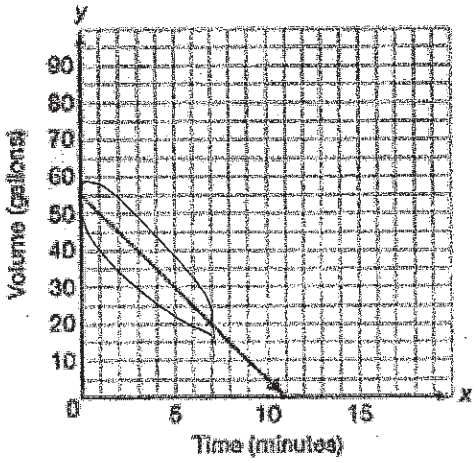
$x < 10$

9. How many games must Leon play in order to score more than 143 points?

$13x + 52 > 143$ $x > 7$ He must play in more than 7 games to score more than 143 points.

$13x > 91$

10. 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? **Draw an oval on the graph to represent the solution to the question and write the corresponding inequality statement.**



x = time in minutes

$x \leq 7$

11. **Chang-Ho is going on a trip to visit some friends from summer camp. He will use $40 for food and entertainment. He will also need money to cover the cost of gas. The price of gas at the time of his trip is $3.25 per gallon.**

a. Write a function (In the form $C(g)$) to represent the total cost of the trip as a function of the number of gallons used. $C(g) = 3.25g + 40$

b. Identify the independent and dependent quantities and their units.

Ind: # of gallons of gas

Dep: cost ($)

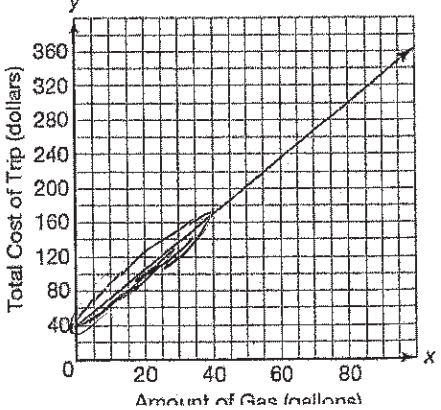
c. Identify the rate of change and the *y*-intercept. **Explain** their meanings in terms of the problem situation

rate of change: 3.25 He will spend $3.25 per gallon of gas

y int: 40 He will spend $40 on food + entertainment alone if he drives 0 miles

d. Use the graph to determine how many gallons of gas Chang-Ho can buy if he has $170 saved for the trip. **Draw an oval** on the graph to represent the solution. Then **write** your answer in **words** and as an **inequality**.

The can buy 40 or fewer gallons of gas

x = # of gallons of gas he can buy

$x \leq 40$