

Indicators

Objective:

5.03 Solve problems using linear equations and inequalities; justify symbolically and graphically.

Vocabulary and Resources		
use of formulas	y-intercept	less than or equal to \leq
coordinate plane	less than $<$	greater than or equal to \geq
x-intercept	greater than $>$	compound inequality $a < x < b$

A. When I was 8 years old my father was 32 years old, which was four times my age. Now he is twice my age. How old am I?

B. The Tentor family of five is going camping at Watagua State Park. The State Park charges a one-time flat fee of \$3.00 per person. In addition, there is a nightly rate. The Tentors were charged a total of \$63.00 for four nights. Write and solve an equation to determine the nightly rate. The Tentor's neighbors have decided to join them. They have three people in their family and can stay an extra night. What is their neighbors' cost?

C. The graph of the line $3x + 4y = 48$ intersects both the x -axis and y -axis forming a triangle. Find the area of this triangle.

D. A new band, The Topsail Pirates, has just made a CD. They recorded it themselves at a cost of \$8,000. They have been offered a contract by a recording company to produce and promote it. The company is offering them \$5,000 and 16 percent of total sales. What will the minimum amount of sales need to be in order for the band to recover the expense of recording the CD?

E. The power company uses two different rates to calculate a monthly power bill. For July-October, the basic customer charge is \$6.75 plus \$0.08065 per kilowatt-hour. For November-June, the basic customer charge is \$6.75 plus \$0.07065 per kilowatt-hour. A sales tax of 3% is added for the final charge. If the May and September bills are both \$127, what is the difference in the amount of power (kilowatt-hours) used each month?

F. A video store rents new releases for \$5 each and family special videos for \$2 each. Steve has \$15 to rent videos.

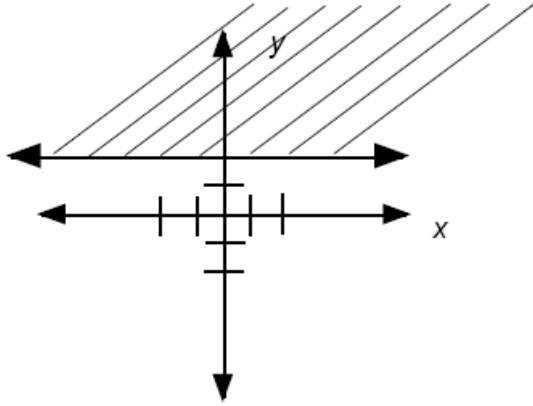
- Give an inequality that can be used to determine the number of each type of video Steve can rent.
- Graph the inequality.
- Using the graph, give three possible combinations of videos Steve could rent.

G. The number, n , of CDs in Harper's CD holder is described by the following inequality: $12 < n - 5 < 26$. Which of the following sets contains values that could represent the number of CDs in the holder?

- $\{12, 13, 14, 15, \dots, 26\}$
- $\{13, 14, 15, 16, \dots, 25\}$
- $\{17, 18, 19, 20, \dots, 31\}$
- $\{18, 19, 20, 21, \dots, 30\}$

H. Write an inequality for each of the following:

a.



b.

