

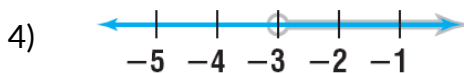
Name: \_\_\_\_\_

## Solving Linear Inequalities

- 1) You go on a business trip and rent a car for \$75 per week plus 23 cents per mile. Your employer will pay a maximum of \$100 per week for the rental. (Assume that the car rental company rounds to the nearest mile when computing the mileage cost.)
  - 1) Write an inequality that models this situation.
  - 2) What is the maximum number of miles that you can drive and still be reimbursed in full?
  
- 2) Joseph rents a catering hall to put on a dinner theatre. He pays \$225 to rent the space, and pays an additional \$7 per plate for each dinner served. He then sells tickets for \$15 each.
  - 1) Joseph wants to make a profit. Write an inequality that models this situation.
  - 2) How many tickets must he sell to make a profit?
  
- 3) A phone company has two long distance plans as follows:
 

Plan 1: \$4.95/month plus 5 cents/minute  
 Plan 2: \$2.75/month plus 7 cents/minute

How many minutes would you need to talk each month in order for Plan 1 to be more cost-effective than Plan 2?
  
- 4) Write an inequality for each graph.



5) Write and solve an inequality for each situation.

1) Three fifths times the sum of a number and 5 is greater than 15.

2) Four times the difference of a number and 3 is less than 24.

6) Find four solutions for each inequalities

(1)  $x + 8 > 5$

(2)  $5y < 40$

(3)  $2y < 7$

(4)  $7 + 2x > 5 - x$

(5)  $4 + 2b \geq 5b + 9$

(6)  $3(x - 3) \leq 6$

(7)  $3(y - 2) \geq 2(y - 1)$

(8)  $2(3a - 1) \leq 3(4a + 3)$

(9)  $3x - 1 \geq 2(2x - 1) + 3$

(10)  $2(p + 2) \leq 6p - 3(p - 4)$ .