

NAME: \_\_\_\_\_

*P.I. A.A.6: Analyze and solve verbal problems whose solution requires solving a linear inequality in one variable*

1. In order to collect a salary bonus, Joe Bigleague must get at least 280 hits this season. In the second to last week of the season, Joe started with 266 hits and got 8 more. How many hits must Joe get in the season's last week?

2. This table shows the total sales figures for Mrs. Smith in the last six weeks.

Week	Total Sales (thousands)
1	\$34.5
2	14.2
3	48.5
4	26.4
5	21.7
6	39.2

Mrs. Smith's salary is \$280 per week plus 3% commission on sales. For which weeks was Mrs. Smith's salary at least \$1000?

3. The cost of renting a car is \$23 per day plus \$.15 per mile driven. If the car is rented for 2 days, determine the mileage for which the cost of renting the car would be less than \$67.

4. a. Hannah is driving at a rate of 53.5 mph. This rate is at least 11.5 miles less than the speed limit. Write an inequality for this situation.  
b. Use the inequality you wrote in part (a) to find the speed limit.
5. Use a calculator to solve the following problem. Tia is a sales representative for a computer company. She earns a 23% commission of all of her sales. She has expenses of \$326.99 this month. What dollar amount of computer products must she sell this month to earn at least \$2500 after expenses?
6. The highest recorded temperature in Florida was  $109^{\circ}\text{F}$  on June 29, 1931. The lowest recorded temperature was  $-2^{\circ}\text{F}$  on February 13, 1899. Define a variable and write a compound inequality to describe this situation.

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7. Chris and Jhen shoveled snow together and shared their total earnings equally. On Saturday they earned at least \$40 each and on Sunday they earned at least \$60 each. Write an inequality to find the least possible amount of their total earnings and graph your solution.

8. Compare the quantities in Column A and Column B.

Column A

The number of 2.5-inch wide tiles that will fill the width of an 8-foot wide floor.

Column B

The number of 3.5-inch wide tiles that will fill the width of a 12-foot wide floor.

- [A] The quantity in Column A is greater.                      [B] The quantity in Column B is greater.  
[C] The quantities are equal.  
[D] The relationship cannot be determined from the information given.

9. The width of a rectangle is 27 centimeters. Find all possible values for the length of the rectangle if the perimeter is at least 248 centimeters.

- [A]  $x \geq 97$  cm                      [B]  $x \geq 62$  cm                      [C]  $x \geq 9.19$  cm                      [D]  $x \geq 194$  cm

10. An oil tank contains 215.1 gallons of oil. Whenever the amount of oil drops below 70 gallons, an alarm sounds. If 164.1 gallons are pumped into a delivery truck, how many gallons must be pumped back into the tank in order to shut off the alarm?

- [A] at least 126.1 gallons    [B] at least 19 gallons    [C] at least 51 gallons    [D] at least 18 gallons

[1] at least 6 hits

[2] Weeks 1, 3, 4, and 6.

[3] The mileage must be less than 140 miles.

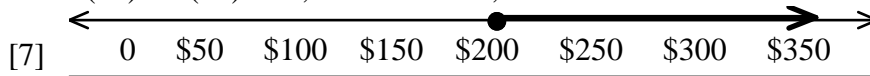
a.  $53.5 \leq x - 11.5$

[4] b. at least 65 mph

[5] at least \$12,291.26

[6]  $t =$  temperature in Florida;  $-2 \leq t \leq 109$

$2(40) + 2(60) \leq x$ ;  $80 + 120 \leq x$ ;  $200 \leq x$ .



[8] B

[9] A

[10] B