A1 Lesson 3.9 Homework

Name _Parker S_

1. At a candy store, a bar of chocolate costs $\$1.75$ and a bag of sour gummies costs $\$2.10$. If Jacinta has $\$10$ to spend and plans to buy 3 bags of sour gummies.

   a. Write an inequality that could be used to determine how many candy bars she can buy with her money.

   $$\boxed{1.75x \leq 3.7}$$

   $$1.75x + 2.10y \leq 10$$
   $$y = 3$$

   b. What is the maximum number of candy bars Jacinta can buy?

   $\boxed{2}$

2. Company A hires employees for $\$11.50$ an hour. Company B hires employees for $\$10$ an hour but offers an $\$800$ signing bonus for all new employees.

   a. Write an inequality to represent when it is better to work at Company B than Company A. Use x to represent the hours worked.

   $$x < 33\tfrac{1}{3}$$

   b. Solve the inequality. Interpret your solution in the context of this problem.

   $$x < 533\tfrac{1}{3}$$ when you have worked More than $533\tfrac{1}{3}$ hours company A Makes you more

3. When Linus is asked to solve $20 - 3x > 8$, he first determines that when $x = 4, 20 - 3x = 20 - 3(4) = 8$. Explain how Linus can figure out if the solution to the inequality is $x > 4$ or $x < 4$.

   if he needs to multiply the sides by a negative number you flip the sighn

4. Solve $13 \leq \dfrac{a}{5} + 6 \leq 15$.

   $$35 \leq x \leq 45$$

5. Solve for y. $6(y - 4) \leq 6(2y + 3)$

   $$y \geq -7$$

6. Which of the following describes all the values of x for which the expression $\dfrac{1}{5}x + 10$ is positive?

   A) For all values of x.

   B) $x > 0$

   C) $x > -10$

   D) $\boxed{x > -50}$

7. Mr. Kempema's daughter is an 85 centimeters tall toddler, growing at a rate of 7 cm per year. Safety experts recommend moving from a car seat to a booster seat when the child is at least 95 cm tall, and changing to a seat belt when the child is 145 centimeters tall. Write and solve an inequality to represent the months, m, when Mr. Kempema's daughter should be in a booster seat. Assume that $m = 0$ represents today.

8. Ms. Lopez tells her students that she's thinking of a number. She gives her students the following clues.
   - Doubling the number gives a value in between -10 and 10.
   - Subtracting 5 from the number gives a value bigger than -14 but less than -3.
   - The number is a whole number.
   List all the possibilities for Ms. Lopez' number.

   $\#=x$

   $5 \geq x 2 - 8$

9. Four friends take turns driving on a road trip. Kelly drives 28 miles in the first half hour. John drives 82 miles in the following hour. Ebise then drives 58 miles in the next 45 minutes. Write an inequality to determine how many miles Eric can drive in the final 45 minutes of the trip so that the average speed over their whole trip does not exceed 70 miles per hour. Then explain how you can solve the inequality.

   distance $\Rightarrow x$

   $x \leq 94$