Key

Word Problem Practice

1. Satchi found a used bookstore that sells pre-owned DVDs and CDs. DVDs cost $9 each, and CDs cost $7 each. Satchi can spend no more than $35.

   a. Write an inequality that represents this situation. $9D + 7C \leq 35$

   b. Does Satchi have enough money to buy 2 DVDs and 3 CDs?

   $9(2) + 7(3) \leq 35$
   $18 + 21 \leq 35$
   $39 \neq 35$
   NO!

2. Tyler has $75 to spend at the mall. He purchases a music video for $14.99 and a pair of jeans for $18.99. He also spent $4.75 for lunch. Tyler still wants to purchase a video game. How much money can he spend on a video game?

   $14.99 + 18.99 + 4.75 + x \leq 75$
   $38.73 + x \leq 75$
   $-38.73 \quad -38.73$
   $x \leq \$36.27$

3. On average, at least 25,000 pieces of luggage are lost or misdirected each day by United States airlines. Of these, 98% are located by the airlines within 5 days. From a given day's lost luggage, at ~~least~~ most how many pieces of luggage are still lost after 5 days?

   $.98(25{,}000) = 24{,}500$
   $x \leq 500$

4. Gil earned these scores on the first three tests in biology this term: 86, 88, and 78. What is the lowest score that Gil can earn on the fourth and final test of the term if he wants to have an average of at least 83?

   $\frac{86+88+78+x}{4} \geq 83$
   $x \geq 80$
   $\frac{252+x}{4} \geq 83$
   $252 + x \geq 332$
   $-252 \quad -252$

5. Jay has lost his mother's favorite necklace, so he will rent a metal detector to try to find it. A rental company charges a one-time rental fee of $15 plus $2 per hour to rent a metal detector. Jay has only $35 to spend. What is the maximum amount of time he can rent the metal detector?

   $15 + 2h \leq 35$
   $2h \leq 20$
   $h \leq 10$ hours

6. Bobby, Billy, and Barry Smith are each one year apart in age. The sum of their ages is greater than the age of their father, who is 60. How old can the oldest brother can be?

   let B = Bobby
   B+1 = Billy
   B+2 = Barry

   $3b + 3 > 60$
   $3b > 57$
   $b = 19$

   Bobby = 19 yrs Old
   Barry = 21 yrs old

7. Jamal works in a city and sometimes takes a taxi to work. The taxicabs charge \$1.50 for the first $\frac{1}{5}$ mile and \$0.25 for each additional $\frac{1}{5}$ mile. Jamal has only \$3.75 in his pocket. What is the maximum distance he can travel by taxi if he does not tip the driver?

$1.50 + .25x \leq 3.75$

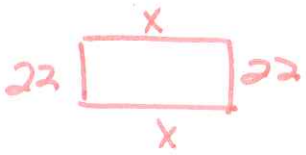
$.25x \leq 2.25$

$x \leq 9$

$x = \frac{1}{5}$ miles

$\frac{1}{5}$ mile $+ \frac{9}{5}$ miles $= \frac{10}{5}$ = 2 miles

8. The perimeter of a rectangular playground must be no greater than 120 meters, because that is the total length of the materials available for the border. The width of the playground cannot exceed 22 meters. What are the possible lengths of the playground?



$2x + 44 \leq 120$

$\frac{2x}{2} \leq \frac{76}{2}$

$x \leq 38$ meters

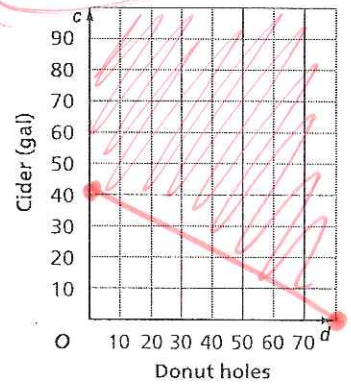
9. Michelle works in the sales department at a local software developer. She is paid \$2000 per month plus 8% commission on her sales for that month. How much money should she sell each month if her goal is to make at least \$5000?

$2000 + .08s \geq 5000$

$.08s \geq 3000$

$s \geq \$37,500$

10. Troop 200 sold cider and donuts to raise money for charity. They sold small boxes of donut holes for \$1.25 and cider for \$2.50 a gallon. In order to cover their expenses, they needed to raise at least \$100. Write and graph an inequality that represents this situation.



$1.25d + 2.50c \geq 100$

$1.25d = 100$ $\quad$ $2.50c = 100$

$d = 80$ $\quad$ $c = 40$

graph w/ intercepts