

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

PER: \_\_\_\_\_

**INEQUALITY APP. REVIEW**

1. A bakery sells a box of 12 cookies for \$10.50 and charges \$0.24 for each additional cookie. If Marshall has \$20.00 to buy the box of cookies and additional cookies, what is the maximum number of additional cookies he can buy?

 $x$  - add. cookies

$$\begin{array}{r} 10.50 + .24x \leq 20 \\ -10.50 \qquad \qquad -10.50 \\ \hline .24x \leq 9.50 \\ \hline .24x \leq 9.50 \\ \hline .24 \qquad \qquad .24 \end{array}$$

$$x \leq 39.5$$

**39 cookies**

2. Peter begins his kindergarten year able to spell 10 words. He is going to learn to spell 2 new words every day. What is the minimum number of whole days it will take for him to be able to spell at least 75 words?

 $x$  - days

$$\begin{array}{r} 10 + 2x \geq 75 \\ -10 \qquad \qquad -10 \\ \hline 2x \geq 65 \\ \hline \frac{2x}{2} \geq \frac{65}{2} \end{array} \rightarrow x \geq 32.5$$

**33 days**

3. The entertainment committee voted to hire a DJ for the school dance. The DJ charges a \$75 set-up fee plus \$30 per hour for playing music. The committee has a budget of \$200, which they cannot exceed. Which inequality represents the number of hours the DJ can be booked?

$$75 + 30h \leq 200$$

 $h$  - hours

4. Tamara has a cell phone plan that charges \$0.07 per minute plus a monthly fee of \$19.00. She budgets \$29.50 per month for total cell phone expenses without taxes. What is the maximum number of minutes Tamara could use her phone each month in order to stay within her budget?

 $x$  - min

$$\begin{array}{r} .07x + 19 \leq 29.50 \\ -19.00 \qquad \qquad -19.00 \\ \hline .07x \leq 10.5 \\ \hline .07x \leq 10.5 \\ \hline .07 \qquad \qquad .07 \end{array}$$

$$x \leq 150$$

**150 minutes**

5. Triniti had \$500 in a saving account at the beginning of the summer. She wants to have at least \$200 in the account by the end of the summer. She withdraws \$25 each week for food, clothes, and movie tickets.

 $w$  - weeks

$$\begin{array}{r} 500 - 25w \geq 200 \\ -500 \qquad \qquad -500 \\ \hline -25w \geq -300 \\ \hline \frac{-25w}{-25} \geq \frac{-300}{-25} \end{array} \rightarrow w \geq 12$$

**12 weeks**

6. Kevin has \$25. MP3 downloads cost \$0.75 each. How many songs can he download and still have \$13 left to spend?

 $x$  - songs

$$\begin{array}{r} 25 - .75x \geq 13 \\ -25 \qquad \qquad -25 \\ \hline -.75x \geq -12 \\ \hline \frac{-.75x}{-.75} \geq \frac{-12}{-.75} \end{array} \rightarrow x \leq 16$$

**16 songs**

7. Daniel had \$25 to spend at the fair. If the admission to the fair is \$4 and the rides cost \$1.50 each, what is the greatest number of rides Daniel can go on?

 $x$  - rides

$$\begin{array}{r} 4 + 1.50x \leq 25 \\ -4 \qquad \qquad -4 \\ \hline 1.50x \leq 21 \\ \hline \frac{1.50x}{1.50} \leq \frac{21}{1.50} \end{array} \rightarrow x \leq 14$$

**14 rides**

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8. The seventh grade class is putting on a variety show to raise money. It cost \$700 to rent the banquet hall that they are going to use. If they charge \$15 for each ticket, how many tickets do they need to sell in order to raise at least \$1000?

$$x\text{-tickets} \quad \begin{array}{r} 700 + 15x \geq 1000 \\ -700 \quad -700 \end{array} \rightarrow \frac{15x}{15} \geq \frac{300}{15} \rightarrow x \geq 20$$

**20 tickets**

9. Jess saved \$500 working during the summer. He plans to buy school clothes with his money. He found jeans he liked for \$30 per pair, including tax, and shirts for \$17, including tax. If he buys exactly twice as many shirts as jeans, how many pairs of jeans can Jess buy without exceeding \$500? A. 6 B. 7 C. 10 D. 16

$$30(7) + 14(12) = 448 \leq 500 \checkmark$$

10. Patty needs a total of \$80 to buy a bicycle. She has already saved \$35. If she saves \$10 a week from her earnings, what is the least number of weeks she must work to have enough money to buy the bicycle?

$$x\text{-weeks} \quad \begin{array}{r} 35 + 10x \geq 80 \\ -35 \quad -35 \end{array} \rightarrow \frac{10x}{10} \geq \frac{45}{10} \rightarrow x \geq 4.5$$

**5 weeks**

11. The cost of a telephone call is \$0.60 for the first three minutes plus \$0.17 for each additional minute. What is the greatest number of whole minutes the telephone call can be if the cost cannot exceed \$2.50?

$$x\text{-minutes} \quad \begin{array}{r} .60 + .17x \leq 2.50 \\ -.60 \quad -.60 \end{array} \rightarrow \frac{.17x}{.17} \leq \frac{1.90}{.17}$$

$$x \leq 11.17$$

**11 minutes**

12. Ryan is a wrestler trying to make weight. He currently weighs 200 lbs. If he cuts 2 lbs. per week, how many weeks will it take him to weigh less than 175 lbs.?

$$x\text{-weeks} \quad \begin{array}{r} 200 - 2x < 175 \\ -200 \quad -200 \end{array} \rightarrow \frac{-2x}{-2} < \frac{-25}{-2} \rightarrow x < 12.5$$

**13 weeks**

13. A taxi charges a flat rate of \$1.75, plus an additional \$0.65 per mile. If Erica has at most \$10 to spend on the cab ride, how far could she travel?

$$x\text{-miles} \quad \begin{array}{r} 1.75 + .65x \leq 10 \\ -1.75 \quad -1.75 \end{array} \rightarrow .65x \leq 8.25$$

$$x \leq 12.6$$

**12 miles**

14.

Justin wants to have at least a 75 test average in Algebra 1 this six weeks. He will have 3 test grades. He received a 72 and a 76 on the first two tests. What must he make on the third test to receive at least a 75 test average?

$$x\text{-3rd test} \quad (3) \frac{72 + 76 + x}{3} \geq 75 (3)$$

$$72 + 76 + x \geq 225$$

$$-72 \quad -76 \quad -72 \quad -76$$

**$x \geq 77$**

15.

The charge per mile for a compact rental car at 4-D Rentals is \$0.12. Mrs. Rodriguez is on a business trip and must rent a car to attend various meetings. She has a budget of \$60 per rental for mileage charges. What is the greatest number of miles Mrs. Rodriguez can travel without going over her budget?

$$x\text{-miles} \quad .12x \leq 60$$

$$\frac{.12x}{.12} \leq \frac{60}{.12}$$

**$x \leq 500$**