Name Key Hour

12.5 & 12.6 Word Problems

1. Sunday's high temperature of 72°F was at least 40°F higher than Monday's high temperature. What was Monday's high temperature?

Sunday's high was at least 40°F higher than Monday's high.

variable x = Monday's temp.

Inequality $72 \geq 40 + x$

$-40 \quad -40$

$32 \geq x$

$x \leq 32$

Solution set $32 \geq x$

Answer phrase at most 32°F

2. In order for a field trip to be scheduled, at least 30 students must sign up. So far, 23 students have signed up. At least how many more students must sign up in order for the field trip to be scheduled?

variable x = # of students

Inequality $x + 23 \geq 30$

$-23 \quad -23$

$x \geq 7$

Solution set $x \geq 7$

Answer phrase at least 7 students

3. **Consumer Math** To get a group discount for baseball tickets, Marco's group must have at least 20 people. The group needs at least 7 more people to sign up. How many have signed up so far?

variable x = # of ppl

Inequality $x + 7 \geq 20$

$-7 \quad -7$

$x \geq 13$

Solution set $x \geq 13$

Answer phrase at least 13 ppl

4. Mila wants to spend at least $20 on a classified ad in the newspaper. She has $12. How much more does she need?

variable x = $ needed

Inequality $x + 12 \geq 20$

$-12 \quad -12$

$x \geq 8$

Solution set $x \geq 8$

Answer phrase at least $8

12.6

5. It cost the Schmidts $517 to raise watermelons. How many watermelons must they sell at $5 apiece to make a profit?

variable x = # of watermelons

Inequality $\frac{5x > 517}{5 \quad 5}$

$x > 103.4$

Solution set $x > 103.4$

Answer phrase more than 103

at least 104

6. It cost Deirdre $212 to make candles. How many candles must she sell at $8 apiece to make a profit?

variable x = # of candles

Inequality $\frac{8x > 212}{8 \quad 8}$

$x > 26.5$

Solution set $x > 26.5$

Answer phrase at least 27 candles

more than 26 candles

7. It cost the Wilson children $55 to make lemonade. How many glasses must they sell at 75¢ each to make a profit?

variable x = # of glasses

Inequality $\frac{.75x > 55}{.75 \quad .75}$

$x > 73.\overline{3}$

Solution set $x > 73.\overline{3}$

Answer phrase at least 74 glasses

more than 73 glasses

8. Attendance at a museum more than tripled from Monday to Saturday. On Monday, 186 people went to the museum. How many people went to the museum on Saturday?

variable x = Sat. attendance

Inequality $x > 186 \cdot 3$

$x > 558$

Solution set $x > 558$

Answer phrase more than 558

at least 559 ppl

12.7 Word Problems

9. **The 83 members of the Newman Middle School Band are trying to raise at least $5,000 to buy new percussion instruments. They have already raised $850. How much should each student still raise, on average, to meet the goal?**

Let d represent the average amount each student should still raise.

Inequality $83x + 850 \geq 5{,}000$

$-850 \quad -850$

$83x \geq 4150$

$\frac{83x}{83} \geq \frac{4150}{83}$

$x \geq 50$

Solution set $x \geq 50$

Answer phrase at least $50

10. **Sun-Li has $30 to spend at the carnival. Admission is $5, and each ride costs $2. What is the greatest number of rides she can ride?**

Let r represent the number of rides Sun-Li can ride.

Inequality $5 + 2r \leq 30$

$-5 \quad -5$

$2r \leq 25$

$\frac{2r}{2} \leq \frac{25}{2}$

$r \leq 12.5$

Solution set $r \leq 12.5$

Answer phrase no more than 12 rides

11. Margie has $100. She wants to buy a book for $20 and some CDs for $15 each. At most, how many CDs can Margie buy?

variable x = # CDs

Inequality $20 + 15x \leq 100$

$-20 \quad -20$

$\frac{15x}{15} \leq \frac{80}{15}$

$x \leq 5.\overline{3}$

Solution set $x \leq 5.\overline{3}$

Answer phrase no more than 5 CDs

12. Manny needs to buy 5 work shirts that are each the same price. After he uses a $20 gift certificate, he can spend no more than $50. What is the maximum amount that each shirt can cost?

variable x = $ of ea. shirt

Inequality $5x - 20 \leq 50$

$+20 \quad +20$

$\frac{5x}{5} \leq \frac{70}{5}$

$x \leq 14$

Solution set $x \leq 14$

Answer phrase no more than $14

13. Rico has $5.00. Bagels cost $0.65 each, and a small container of cream cheese costs $1.00. What is the greatest number of bagels Rico can buy if he also buys one small container of cream cheese?

Answer phrase ~~[illegible]~~

variable x = # of bagels

Inequality $.65x + 1.00 \leq 5.00$

$-1.00 \quad -1.00$

$\frac{.65x}{.65} \leq \frac{4}{.65}$

Solution set $x \leq 6.2$

Answer phrase no more than 6 bagels

at more 6 bagels