

1. The maximum load for a certain elevator is 2000 pounds. The total weight of the passengers on the elevator is 1400 pounds. A delivery man who weight 243 pounds enters the elevator with a crate of weight w . Write, solve, and graph an inequality to show the values of w that will not exceed the weight limit of the elevator.

The crate can't weigh more than 357lbs

$$\begin{aligned}1400 + 243 + w &\leq 2000 \\1643 + w &\leq 2000 \\w &\leq 357\end{aligned}$$

2. The gas tank in Mindy's car holds at most 15 gallons. She has already filled the tank with 7 gallons of gas. She will continue to fill the tank with g gallons more. Write and solve an inequality that shows all values of g that Mindy can add to the car's tank.

$$\begin{aligned}7 + g &\leq 15 \\g &\leq 8\end{aligned}$$

She can add 8 gallons or less

3. A particular type of contact lens can be worn up to 30 days in a row. Alex has been wearing these contact lenses for 21 days. Write, solve, and graph an inequality to show how many more days Alex could wear his contact lenses.

9 days or less

$$\begin{aligned}21 + d &\leq 30 \\d &\leq 9\end{aligned}$$

4. At the Seattle Mariners baseball team's home games, there are 45,611 seats in the four areas listed in the table. Suppose all the suite level and club level seats during a game are filled. Write and solve an inequality to determine how many people p could be sitting in the other types of seats.

Type of Seat	Number of Seats
Main Bowl	24,399
Upper Bowl	16,022
Club Level	4,254
Suite Level	936

$$\begin{aligned}4254 + 936 + p &\leq 45,611 \\5190 + p &\leq 45,611 \\p &\leq 40,421\end{aligned}$$

40,421 people max are in other seats

5. A sales representative is given a choice of two paycheck plans. One choice includes a monthly base pay of \$300 plus 10% commission on his sales. The second choice is a monthly salary of \$1200. For what amount of sales would the representative make more money with the first plan?

$$\begin{aligned} 300 + .10x &\geq 1200 \\ .10x &\geq 900 \\ x &\geq 9000 \end{aligned}$$

\$9000 or more
in sales

6. One cell phone company offers a plan that costs \$29.99 and included unlimited night and weekend minutes. Another company offers a plan that costs \$19.99 and charges \$0.35 per minute during nights and weekends. For what numbers of night and weekend minutes does the second company's plan cost more than the first company's plan.

$$\begin{aligned} \text{2nd} &> \text{1st} \\ 19.99 + .35x &> 29.99 \\ .35x &> 10 \end{aligned}$$

$$x > 28.\bar{57}$$

29 min or
more

7. Ten less than a number x is greater than 32.

$$x - 10 > 32$$

$$x > 42$$

8. A number n increased by 6 is less than or equal to 4.

$$n + 6 \leq 4$$

$$n \leq -2$$

9. The quotient of h and -6 is at least 5.

$$\frac{h}{-6} \geq 5$$

$$h \geq -30$$

10. One half of a number, increased by 9, is less than 33.

$$\frac{1}{2}n + 9 < 33$$

$$n < 48$$

$$\frac{1}{2}n < 24$$

11. The sum of half a number and two-thirds of the number is less than 14.

$$\left(\frac{1}{2}n + \frac{2}{3}n < 14\right) \cdot 6$$

$$7n < 84$$

$$3n + 4n < 84$$

$$n < 12$$