

Warm up: $-7.24 + (-3.14)$

Evaluate.

$$1) -7.24 - 3.14$$

$$\begin{array}{r} 7.24 \\ + 3.14 \\ \hline -10.38 \end{array}$$

$$2) 2.98 + (-4.4)$$

$$\begin{array}{r} 2.98 \\ - 4.40 \\ \hline -1.42 \end{array}$$

$$3) -4\frac{1}{3} - \left(-2\frac{5}{6}\right) = -\frac{13}{3} + \frac{17}{6} = -\frac{26}{6} + \frac{17}{6} = -\frac{9}{6}$$

$$= -\frac{3}{2} = \left(-\frac{1\frac{1}{2}}{2}\right)$$

HW Solutions

⑦

$$\frac{x}{2} + 5 > 3$$

$$-5 \quad -5$$

$$\frac{x}{2} > -2$$

$$x > -4$$

$$\begin{array}{l} \textcircled{2} \quad 2x - 6 > 8 \\ \quad \quad +6 \quad +6 \\ \hline 2x > 14 \\ \frac{2x}{2} > \frac{14}{2} \\ \hline x > 7 \end{array}$$

$$\begin{array}{l} \textcircled{3} \quad -11 \geq 4 - 3x \\ \quad \quad -4 \quad -4 \\ \hline -15 \geq -3x \\ \frac{-15}{-3} \geq \frac{-3x}{-3} \\ \hline 5 \leq x \\ \hline x \geq 5 \end{array}$$

Write an inequality to model the following situation.

You must be over 12 years old to play.

$$a > 12$$

You must be at least 48 inches tall to ride the roller coaster.

$$t \geq 48$$

A suitcase must weigh less than 40 pounds.

$$w < 40$$

A fuel tank holds at most 16 gallons of gasoline.

$$f \leq 16$$

You must be 12 years of age or younger to order from the children's menu.

$$a \leq 12$$

Key Words/Phrases

-less than
-fewer than

$<$

-greater than
-more than
-exceeds

$>$

-less than or equal to
-no more than
-at most

\leq

-greater than or equal to
-no less than
-at least

\geq

The Airbus A380 can seat up to 853 passengers. There are currently 632 passengers boarded on the airplane. Write and solve an inequality to determine how many more people are able to board.

$$\begin{array}{r} p + 632 \leq 853 \\ - 632 \quad - 632 \\ \hline \end{array}$$

$$p \leq 221$$

221 people or less

at most 221 people

Joshua spends \$0.25 every time he sends a text message. Write and solve an inequality to find how many text messages he can send with \$3.00.

$$\frac{0.25t}{0.25} \leq \frac{3}{0.25}$$
$$t \leq 12$$

at most 12 texts

A local gym charges \$5 each time you enter. They also have yearly memberships for \$190. Write and solve an inequality to find how many times as person should use the gym so that a yearly membership is less expensive than paying each time.

more than
38 times

$$\begin{array}{r} 5x > 190 \\ \hline 5 > \\ \hline x > 38 \end{array}$$

A rental car company charges \$45 plus an additional \$0.19 per mile to rent a car. How many miles can Lawrence drive if he does not want to spend more than \$100?

$$\begin{array}{r} 45 + 0.19m \leq 100 \\ -45 \quad \quad \quad -45 \\ \hline \end{array}$$

$$\begin{array}{r} 0.19m \leq 55 \\ \hline 0.19 \quad 0.19 \\ \hline \end{array}$$

$$m \leq 289.4736842105263$$

$$\begin{array}{r} 289. \\ 19 \overline{) 5500.0} \\ \underline{-38} \\ 170 \\ \underline{-152} \\ 180 \\ \underline{-171} \\ 90 \end{array}$$

289mi or less

- 1) A moving company is loading a 920 lb piano into a service elevator. Find how much additional weight the elevator can carry if its maximum capacity is 1,800 lb.
- 2) Audrey wants to spend less than \$38.50 on new golf balls. If each box costs \$11, what is the maximum number of boxes of golf balls that she can buy?
- 3) Max charges \$6.25/h to rake leaves. He is trying to save enough money for a new pair of shoes that cost \$89. How many whole hours will he need to work to buy the shoes?
- 4) First Bank charges \$4.50 per month for a basic checking account plus \$0.15 for each check written. Citizen's Bank charges a flat fee of \$9. How many checks would you have to write each month in order for Citizen's Bank to be a better deal?
- 5) Manny plays on a baseball team and is trying to break his school's record by getting 61 hits this season. Halfway through the season he already had 34 hits. Manny averages 2 hits per game. At that rate, how many more games will it take for Manny have at least 61 hits.

1) A moving company is loading a 920 lb piano into a service elevator. Find how much additional weight the elevator can carry if its maximum capacity is 1,800 lb.

$$\begin{array}{r} 920 + w \leq 1800 \\ -920 \qquad \qquad -920 \\ \hline \end{array}$$

$$w \leq 880$$

at most 880 lb

2) Audrey wants to spend less than \$38.50 on new golf balls. If each box costs \$11, what is the maximum number of boxes of golf balls that she can buy?

$$\frac{11b}{11} < \frac{38.50}{11}$$
$$b < 3.5$$

at most 3 boxes

$$11 \overline{) 38.5}$$
$$\begin{array}{r} 3.5 \\ 11 \overline{) 38.5} \\ \underline{-33} \\ 5.5 \\ \underline{-5.5} \\ 0 \end{array}$$

3) Max charges \$6.25/h to rake leaves. He is trying to save enough money for a new pair of shoes that cost \$89. How many whole hours will he need to work to buy the shoes?

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