

You want to download some new songs on your MP3 player. Each song will use about 4.3 MB of space. You have 7.8 GB free out of 19.5 GB. At most, how many songs can you download? (1GB = 1000 MB)

$$7.8 \text{ GB} = 7800 \text{ MB}$$

$$\frac{7800}{4.3} = 1813 \text{ songs}$$

Questions from assignment?

Solving Inequalities

Write the inequality that represents the sentence.

1) . Four less than a number is greater than negative 28.

$$n - 4 > -28$$

2) A number increased by 7 is less than 5.

$$x + 7 < 5$$

Solve each inequality. Graph the solution.

$$\begin{aligned}
 3) \quad & 3(x+1)+2 < 11 \\
 & 3x+3+2 < 11 \\
 & 3x+5 < 11 \\
 & \quad -5 \quad -5 \\
 & \frac{3x}{3} < \frac{6}{3} \\
 & x < 2
 \end{aligned}$$

$$\begin{aligned}
 4) \quad & 5-2(n+2) \leq 4+n \\
 & 5-2n-4 \leq 4+n \\
 & 1-2n \leq 4+n \\
 & -1 \quad -1 \\
 & -2n \leq 3+n \\
 & -n \quad -n \\
 & -3n \leq 3 \\
 & \frac{-3n}{-3} \leq \frac{3}{-3} \\
 & n \geq -1
 \end{aligned}$$

$$\begin{aligned}
 5) \quad & 2[(2y-1)+y] \leq 5(y+3) \\
 & 2[3y-1] \leq 5(y+3) \\
 & 6y-2 \leq 5y+15 \\
 & \quad +2 \quad \quad +2 \\
 & 6y \leq 5y+17 \\
 & -5y \quad -5y \\
 & y \leq 17
 \end{aligned}$$

Is the inequality *always, sometimes, or never* true?

$$\begin{aligned}6) \quad & 3(2x+1) > 5x - (2-x) \\ & 6x+3 > 5x-2+x \\ & \cancel{6x}+3 > \cancel{6x}-2 \\ & 3 > -2\end{aligned}$$

Always

$$\begin{aligned}7) \quad & 7x+2 \leq 2(2x-4)+3x \\ & 7x+2 \leq 4x-8+3x \\ & \cancel{7x}+2 \leq \cancel{7x}-8 \\ & 2 \leq -8\end{aligned}$$

Never

Solve each compound inequality. Graph the solution.

8) $\frac{3x}{3} > -6$ and $\frac{2x}{2} < 6$
 $x > -2$ and $x < 3$
 $-2 < x < 3$

9) $\frac{6x}{6} < -12$ or $\frac{5x}{5} > -15$
 $x < -2$ or $x > -3$

$x > 1$ or $x < -2$

A student believes she can earn between \$5200 and \$6250 from her summer job. She knows that she will have to buy four new tires for her car at \$90 each. She estimates her other expenses while she is working at \$660. How much can the student save from her summer wages?

$x = \text{savings}$

$$5200 \leq x + 660 + \overset{360}{4(90)} \leq 6250$$

$$5200 \leq x + 1020 \leq 6250$$

$$\begin{array}{r} -1020 \\ -1020 \\ -1020 \end{array}$$

$$\$4180 \leq x \leq \$5230$$