

## PIES AND INEQUALITIES (TEACHER GUIDE)

Write an inequality for each scenario (verbal problem). Then solve each inequality.

Verbal Problem	Your Work	
<p>1) A plain, medium pizza costs \$12, and each additional topping costs \$2. Malia can spend no more than \$22 on pizza.</p>	$\begin{array}{r} 12 + 2x \leq 22 \\ -12 \quad -12 \\ \hline 2x \leq 10 \end{array}$	$\frac{2x}{2} \leq \frac{10}{2}$ $x \leq 5$
<p>2) Jorge must spend under \$50 for the entry fee and supplies for the pie-baking contest. The entry fee is \$10 and the supplies cost \$8 per pie.</p>	$\begin{array}{r} 10 + 8x < 50 \\ -10 \quad -10 \\ \hline 8x < 40 \end{array}$	$\frac{8x}{8} < \frac{40}{8}$ $x < 5$
<p>3) Devon is making chicken pot pies for the upcoming party, where at least 50 people will attend. Ten people are vegetarians and will not eat the chicken pot pies. Each chicken pot pie feeds 8 people.</p>	$\begin{array}{r} 10 + 8x \geq 50 \\ -10 \quad -10 \\ \hline 8x \geq 40 \end{array}$	$\frac{8x}{8} \geq \frac{40}{8}$ $x \geq 5$
<p>4) Zsarika needs more than 22 hours to make her world-famous lemon meringue pie if she streams movies as she works. She has already been working for 12 hours and wants to watch as many 2-hour movies as possible with the time she has left.</p>	$\begin{array}{r} 12 + 2x > 22 \\ -12 \quad -12 \\ \hline 2x > 10 \end{array}$	$\frac{2x}{2} > \frac{10}{2}$ $x > 5$
<p>5) Grace steps in a cow pie 11.5 feet away from the south fence. The north fence is at least 25 feet away from the south fence, and she travels 2 feet with each step she takes.</p>	$\begin{array}{r} 11.5 + 2x \geq 25 \\ -11.5 \quad -11.5 \\ \hline 2x \geq 13.5 \end{array}$	$\frac{2x}{2} \geq \frac{13.5}{2}$ $x \geq 6.75$
<p>6) Dev and Bri have been working for more than an hour assembling moon pies. It took 6 minutes to gather the supplies and 8 minutes per moon pie to layer the ingredients and coat them in chocolate.</p>	$\begin{array}{r} 6 + 8x > 60 \\ -6 \quad -6 \\ \hline 8x > 54 \end{array}$	$\frac{8x}{8} > \frac{54}{8}$ $x > 6.75$
<p>7) Noelle has \$25 to spend on pizza. She wants to buy a cheese pizza with extra toppings. The cheese pizza costs \$8, each extra topping is \$2, and Noelle plans to leave a \$3.50 tip.</p>	$\begin{array}{r} 11.5 + 2x \leq 25 \\ -11.5 \quad -11.5 \\ \hline 2x \leq 13.5 \end{array}$	$\frac{2x}{2} \leq \frac{13.5}{2}$ $x \leq 6.75$
<p>8) The pie eating contest cannot accommodate 60 or more contestants. Six people have already registered and now there are 8 people per day registering.</p>	$\begin{array}{r} 6 + 8x < 60 \\ -6 \quad -6 \\ \hline 8x < 54 \end{array}$	$\frac{8x}{8} < \frac{54}{8}$ $x < 6.75$

## PIES AND INEQUALITIES (KEY)

Find the signs that match each given scenario. Write the letters in the corresponding columns.

Verbal Problem	Algebraic Problem	Algebraic Solution	Visual Solution
1) A plain, medium pizza costs \$12, and each additional topping costs \$2. Malia can spend no more than \$22 on pizza.	<b>C</b>	<b>L</b>	<b>V</b>
2) Jorge must spend under \$50 for the entry fee and supplies for the pie-baking contest. The entry fee is \$10 and the supplies cost \$8 per pie.	<b>H</b>	<b>P</b>	<b>Y</b>
3) Devon is making chicken pot pies for the upcoming party, where at least 50 people will attend. Ten people are vegetarians and will not eat the chicken pot pies. Each chicken pot pie feeds 8 people.	<b>G</b>	<b>M</b>	<b>S</b>
4) Zsarika needs more than 22 hours to make her world-famous lemon meringue pie if she streams movies as she works. She has already been working for 12 hours and wants to watch as many 2-hour movies as possible with the time she has left.	<b>A</b>	<b>N</b>	<b>R</b>
5) Grace steps in a cow pie 11.5 feet away from the south fence. The north fence is at least 25 feet away from the south fence, and she travels 2 feet with each step she takes.	<b>B</b>	<b>K</b>	<b>W</b>
6) Dev and Bri have been working for more than an hour assembling moon pies. It took 6 minutes to gather the supplies and 8 minutes per moon pie to layer the ingredients and coat them in chocolate.	<b>E</b>	<b>Q</b>	<b>T</b>
7) Noelle has \$25 to spend on pizza. She wants to buy a cheese pizza with extra toppings. The cheese pizza costs \$8, each extra topping is \$2, and Noelle plans to leave a \$3.50 tip.	<b>D</b>	<b>J</b>	<b>U</b>
8) The pie eating contest cannot accommodate 60 or more contestants. Six people have already registered and now there are 8 people per day registering.	<b>F</b>	<b>I</b>	<b>Z</b>