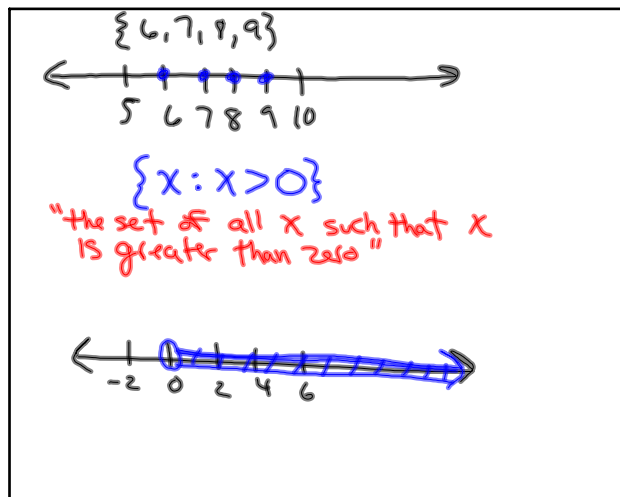


5.1 Sets and solution sets

$\{6,7,8,9\}$ Finite set
 $\{0,1,2,3,\dots\}$ Infinite set

solution set: set of all values that solve the open sentence

Empty set: set that contains no values



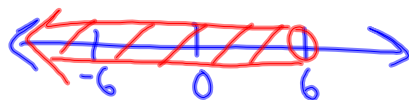
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5.2 Inequalities

$3 < 7$ true
 $3 = 7$ false
 $3 > 7$ false

$x < 6$



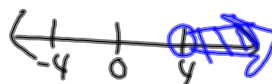
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5.3 Inequality properties

all the same properties as equalities (equations) except for multiplying by a negative

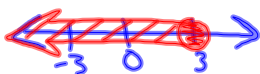
$$\frac{3x}{3} > \frac{12}{3}$$

$$x > 4$$



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$$\begin{array}{r} 6+x \leq 9 \\ -6 \quad -6 \\ \hline x \leq 3 \end{array}$$

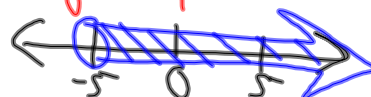


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$$\frac{-2x}{-2} < \frac{10}{-2}$$

$$x > -5$$

when you mult or div by a negative, you must reverse the inequality



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5.4 Solving inequalities

ex2

$$\begin{array}{r} 5x-8 < 6x-6 \\ -5x \quad -5x \\ \hline -8 < x-6 \\ +6 \quad +6 \\ \hline -2 < x \\ x > -2 \end{array}$$

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ex4

$$\begin{array}{r} x+5 > 3x-2(x-1) \\ x+5 > 3x-2x+2 \\ x+5 > x+2 \\ -x \quad -x \\ \hline 5 > 2 \end{array}$$

\mathbb{R}

If $5 < 2$ \emptyset

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130 #14

$$\begin{array}{r} -7b+20 \leq 2b-7 \\ +7b \quad +7b \\ \hline 20 \leq 9b-7 \\ +7 \quad +7 \\ \hline 27 \leq 9b \\ \frac{27}{9} \leq \frac{9b}{9} \\ 3 \leq b \end{array}$$

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5.7 Equations with absolute value

$$|x| = 6$$

① $x = 6$ ② $-x = 6$
 $x = -6$

Jul 8-10:46 AM

EX 4

$$|8-2b| = 10$$

① $(8-2b) = 10$ ② $-(8-2b) = 10$

$$\begin{array}{r} 8-2b = 10 \\ -8 \quad -8 \\ \hline -2b = 2 \\ b = -1 \end{array}$$

$$\begin{array}{r} -8+2b = 10 \\ +8 \quad +8 \\ \hline 2b = 18 \\ b = 9 \end{array}$$

$\{-1, 9\}$

Jul 8-1:31 PM

ex5

$$\begin{array}{r} 3|5m-6| - 7 = 2 \\ +7 \quad +7 \\ \hline 3|5m-6| = 9 \\ \frac{3}{3} \quad \frac{9}{3} \\ \hline |5m-6| = 3 \end{array}$$

If $5m-6 > 0$ If $5m-6 < 0$

$$\begin{array}{r} 5m-6 = 3 \\ 5m = 9 \\ m = \frac{9}{5} \end{array}$$

$$\begin{array}{r} -(5m-6) = 3 \\ -5m+6 = 3 \\ -5m = -3 \\ m = \frac{3}{5} \end{array}$$

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#23 PG 137

$$5|m-2| - 15 = 5$$

$$\begin{array}{r} +15 +15 \\ \hline 5|m-2| = 20 \\ \hline \frac{5|m-2|}{5} = \frac{20}{5} \\ |m-2| = 4 \end{array}$$

$m-2=4$
 $m=6$

$-(m-2)=4$
 $-m+2=4$
 $-m=2$
 $m=-2$

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5.8 Inequalities with absolute value

ex 3

$$|2t-6| \geq 4$$

$$2t-6 \geq 4$$

$$2t \geq 10$$

$$t \geq 5$$

$$-(2t-6) \geq 4$$

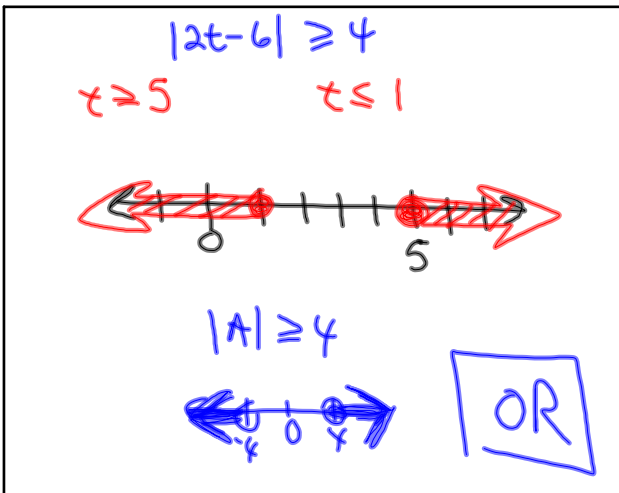
$$-2t+6 \geq 4$$

$$-2t \geq -2$$

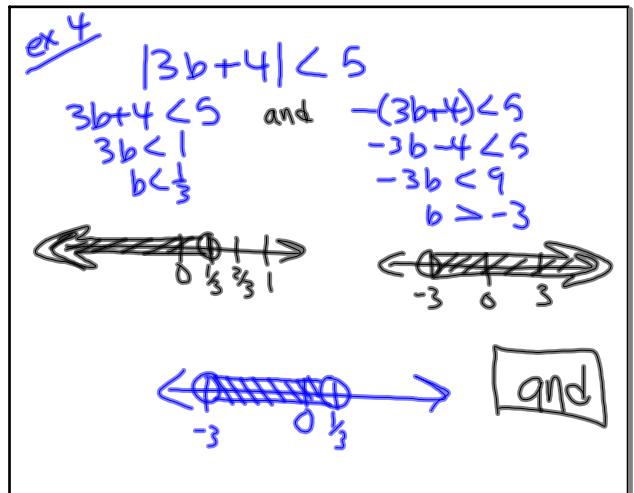
$$t \leq 1$$

* divide by neg! *

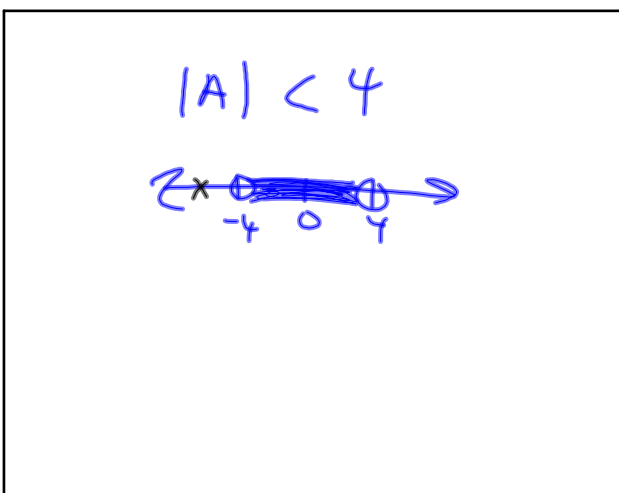
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Jul 8-2:08 PM



Jul 8-2:09 PM

5.9 Inequalities in word problems

#4 PG 142

$c =$ number of cameras

$$165 + 15c \geq 315$$


$$\begin{array}{r} -165 \\ \hline 15c \geq 150 \\ c \geq 10 \end{array}$$

Bryan must sell at least 10 cameras.

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3,5,19,23,27,29,37,39,41



\cup

\wedge	\vee
And	OR
$<$	$>$

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