Solving Inequalities Guided Notes

Notes:

	For all real numbers z, $x \not< x \text{ and } x \not> x$
	For all real numbers x and y, • If $x < y$, then $y \not< x$ • If $x > y$, then $y \not> x$
	For all real numbers x, y and z • If $x < y$, then $y < z$ then $x < z$ • If $x > y$, then $y > z$ then $x > z$
	For all real numbers x,y and z, • If $x<y$ then $x+z<y+z$
	For all real numbers x,y and z, • If $x<y$, then $x-z<y-z$
	For all real numbers x, y and z, • If $x<y$ then $xz<yz \text{ if } z>0$ $xz>yz \text{ if } z<0$ $xz=yz, \text{ if } z=0$ • If $x>y$ then $xz>yz \text{ if } z>0$ $xz<yz \text{ if } z<0$ $xz=yz, \text{ if } z=0$

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Questions:

1. Solve the following inequality for x
   2x + 6 ≥ 3x + 9

2. Solve the following inequality for x
   4(–3x + 6) ≤ 2(–4x – 10)

3. Solve the following inequality for x
   $$\frac{-x + 4}{6} > 10$$

4. Solve the compound inequality
   $2x + 3 < 7$ or $5x + 5 > 25$