

Solving Absolute Value Inequalities - Special Cases Date _____ Period _____

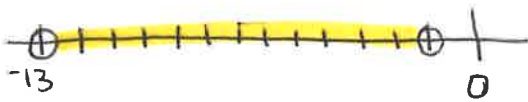
Solve each inequality and then graph your solutions.

$$1) \frac{7}{-5} + |7+v| < \frac{11}{-5}$$

$$|7+v| < 6$$

$$\frac{7+v}{-7} < \frac{6}{-7} \quad \text{and} \quad \frac{7+v}{-7} > \frac{-6}{-7}$$

$$v < -1 \quad \text{and} \quad v > -13$$

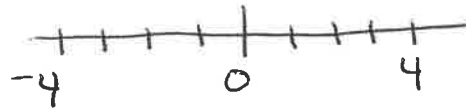


$$2) \frac{7+9}{-7} |-9x-6| < \frac{7}{-7}$$

$$\frac{9}{9} |-9x-6| < \frac{0}{9}$$

$$|-9x-6| < 0$$

No Solution



$$3) \frac{-|8+7b|-3}{2} \leq -2 \cdot 9$$

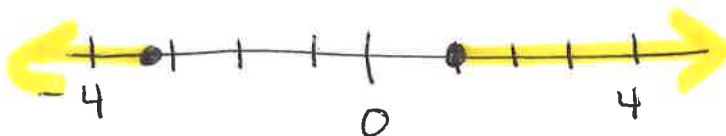
$$\frac{-|8+7b|-3}{2} \leq -18$$

$$-|8+7b| \leq -33$$

$$|8+7b| \geq 33$$

$$\frac{8+7b}{-7} \geq \frac{33}{-7} \quad \text{or} \quad \frac{8+7b}{-7} \leq \frac{-33}{-7}$$

$$b \geq 1 \quad \text{or} \quad b \leq -23/7$$



$$4) \frac{|n-8|}{6} < -6$$

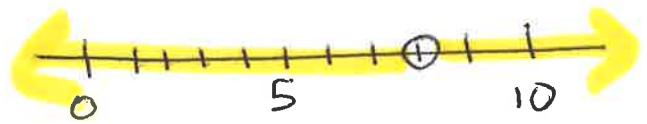
$$|n-8| < -36$$

$$|n-8| > 0$$

$$\frac{n-8}{+8} \neq 0$$

$$n \neq 8$$

all real #'s except $n \neq 8$.

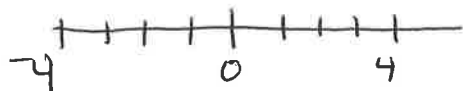


$$5) \frac{2|8x+4|}{-1} \leq \frac{-77}{-1}$$

$$\frac{2|8x+4|}{2} \leq \frac{-78}{2}$$

$$|8x+4| \leq -39$$

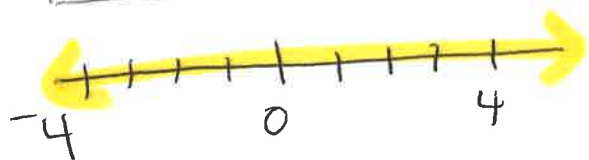
No Solution



$$7) \frac{9}{-1} + \frac{|3n+4|}{-9} \geq 9$$

$$|3n+4| \geq 0$$

all real #'s

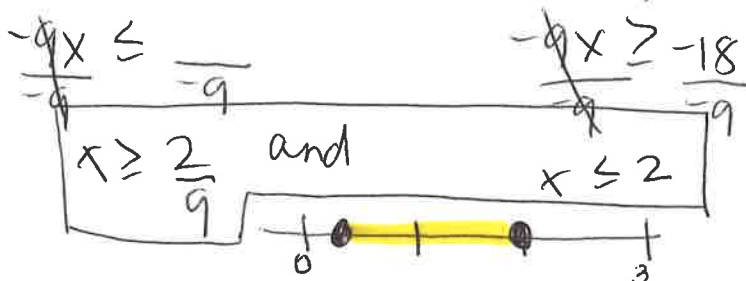


$$9) \frac{9|-9x+10|}{-10} \leq \frac{82}{-10}$$

$$\frac{9|-9x+10|}{9} \leq \frac{72}{9}$$

$$|-9x+10| \leq 8$$

$$-9x+10 \leq 8 \quad \text{and} \quad -9x+10 \geq -8$$



$$6) \frac{-10|4n-6|}{+2} < \frac{-22}{+2}$$

$$\frac{-10|4n-6|}{-10} < \frac{-20}{-10}$$

$$|4n-6| > 2$$

$$4n-6 > 2 \quad \text{or} \quad 4n-6 < -2$$

$$\frac{4n}{4} > \frac{8}{4} \quad \text{or} \quad \frac{4n}{4} < \frac{4}{4}$$

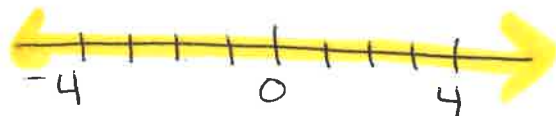
$$n > 2 \quad \text{or} \quad n < 1$$

$$8) \frac{-|-7x-8|}{+5} < \frac{-4}{+5}$$

$$\frac{-|-7x-8|}{-1} < \frac{-4}{-1}$$

$$|-7x-8| > -1$$

all real #'s



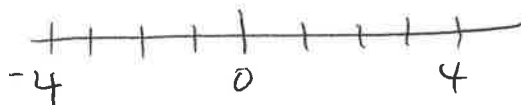
$$10) \frac{3|-8n+9|}{9} + \frac{12}{-12} < \frac{-2}{-12}$$

$$\frac{3|-8n+9|}{9} < \frac{-14}{9}$$

$$\frac{3|-8n+9|}{3} < \frac{-126}{3}$$

$$|-8n+9| < -42$$

No Solution



$$11) \frac{-16 + 5}{+16} |9 + 8m| \leq \frac{-16}{+16}$$

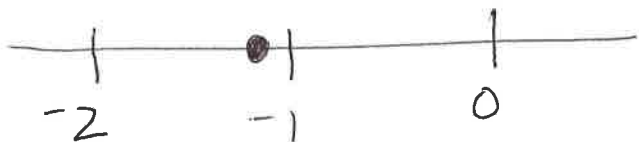
$$\frac{5}{5} |9 + 8m| \leq \frac{0}{5}$$

$$|9 + 8m| \leq 0$$

$$\frac{9}{-9} + 8m = 0$$

$$\frac{8m}{8} = \frac{-9}{8}$$

$$m = -\frac{9}{8}$$



$$12) \frac{-3 - 9 - 7}{3} |-6x + 10| \leq 2 \cdot 3$$

$$\frac{-9 - 7}{+9} |-6x + 10| \leq \frac{6}{+9}$$

$$\frac{-7}{-7} |-6x + 10| \leq \frac{15}{-7}$$

$$|-6x + 10| \geq -\frac{15}{7}$$

all real #'s

