Please put up your phones,

grab a chromebook (leave it closed on your desk),

take your seats,

and have out your homework.

For Questions 10-11, define a variable, write an equation, and solve the problem.

10. Carla began a running program to prepare for track team try-outs. On her first day she ran 3 miles, and on her second day she ran 5 miles. Since then, Carla has run 7 miles each day. If her log book shows that Carla has run a total of 99 miles, for how many days has Carla been running 7 miles?

$3 + 5 + 7d = 99$

$-8 \qquad -8$

$7d = 91$

$\frac{7d}{7} = \frac{91}{7}$

d - days

13 days

$$-1.6r + 5 = -7.8$$
$$-5 \quad -5$$

$$\frac{-1.6r}{-1.6} = \frac{-12.8}{-1.6}$$

$$r = 8$$

$$\frac{5}{6}c + \frac{3}{4} = \frac{11}{12}$$
$$-\frac{3}{4} \quad -\frac{3}{4}$$

$$\left(\frac{6}{5}\right)\frac{5}{6}c = \frac{1}{6}\left(\frac{6}{5}\right)$$

$$c = \frac{1}{5}$$

$$\frac{5}{5}c = \frac{1}{5}$$

$$E = \frac{1}{2}Iw^2 + U$$
$$-U \quad -U$$

$$\left(\frac{2}{1}\right)\frac{E-U}{w^2} = \frac{\frac{1}{2}Iw^2}{w^2}\left(\frac{2}{1}\right)$$

$$\frac{2(E-U)}{w^2} = I$$

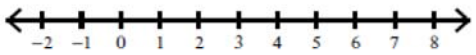
$$\frac{2b}{2} < -\frac{2}{2}$$

$$b < -1$$

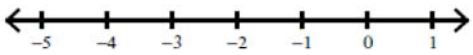
Quiz

Inequalities HW

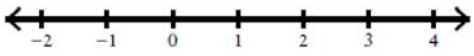
1) $0 > 3x - 3 - 6$



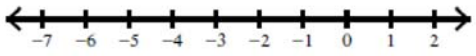
2) $4x + 1 - 1 \geq -8$



3) $-1 \leq 2n + 4 - 5$



4) $-6 > 5n + 5 + 4$

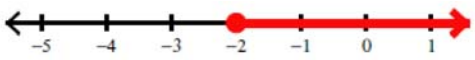


Solve each inequality and graph its solution.

1) $0 > 3x - 3 - 6$

$x < 3$

2) $4x + 1 - 1 \geq -8$

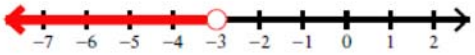


$x \geq -2$

3) $-1 \leq 2n + 4 - 5$

$n \geq 0$

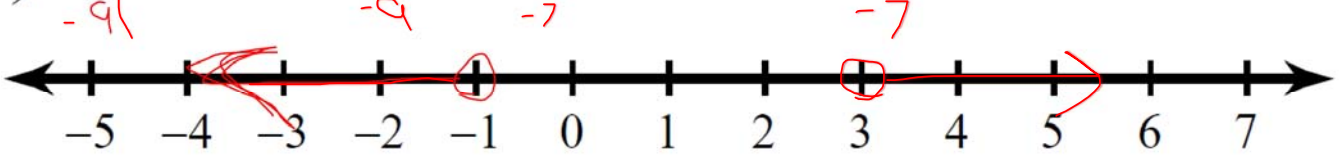
4) $-6 > 5n + 5 + 4$



$n < -3$

Desmos

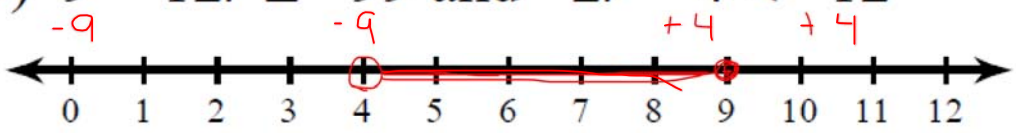
8) $9 + 2b < 7$ or $7 - 5b < -8$



$\frac{2b}{2} < \frac{-2}{2}$ $\qquad$ $\frac{-5b}{-5} < \frac{-15}{-5}$

$b < -1$ OR $b > 3$

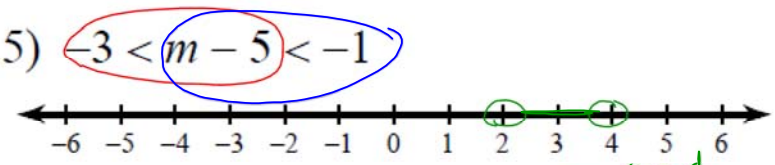
9) $9 - 12r \geq -99$ and $-2r - 4 < -12$



$\frac{-12r}{-12} \geq \frac{-108}{-12}$ $\quad$ $\frac{-2r}{-2} < \frac{-8}{-2}$

$r \leq 9$ AND $r > 4$

5) $-3 < m - 5 < -1$



$-3 < m - 5$ AND $m - 5 < -1$

$+5 \quad +5$ $\quad +5 \quad +5$

$2 < m$ $\quad m < 4$

$m > 2$ $\quad m < 4$

$m > 2$ and $m < 4$

7) $-33 \leq -7n - 12 < -26$

$-33 \leq -7n - 12$ AND $-7n - 12 < -26$

$+12 \quad +12$ $\quad +12 \quad +12$

$-21 \leq -7n$ $\quad -7n < -14$

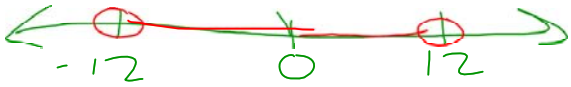
$\frac{-21}{-7} \leq \frac{-7n}{-7}$ $\quad \frac{-7n}{-7} < \frac{-14}{-7}$

$3 \geq n$ $\quad n > 2$

$n \leq 3$ AND $n > 2$

Absolute Value Inequalities

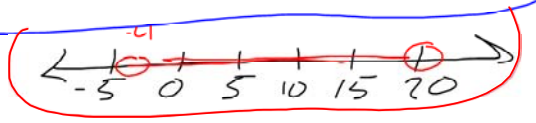
$|x-8| < 12$



$x-8 > -12$ and $x-8 < 12$

$+8 \quad +8 \qquad +8 \quad +8$

$x > -4$ and $x < 20$

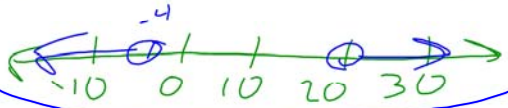


$|x-8| > 12$

$x-8 < -12$ OR $x-8 > 12$

$+8 \quad +8 \qquad +8 \quad +8$

$x < -4$ OR $x > 20$

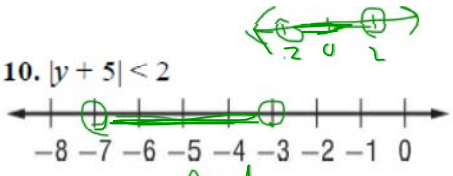


9. $|2w| \geq 5$

$\frac{2w}{2} \leq \frac{-5}{2}$ OR $\frac{2w}{2} \geq \frac{5}{2}$

$w \leq -2.5$ OR $w \geq 2.5$

10. $|y + 5| < 2$



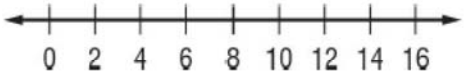
And

$y + 5 > -2$ $\quad$ $y + 5 < 2$

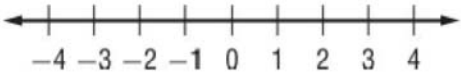
$-5 \quad -5$ $\quad$ $-5 \quad -5$

$y > -7$ And $y < -3$

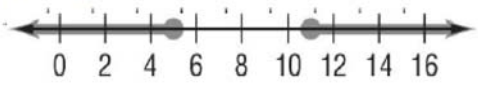
11. $|x - 8| \geq 3$

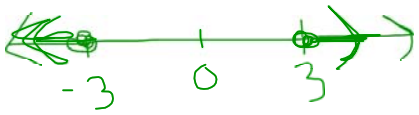


12. $|2z - 2| \leq 3$



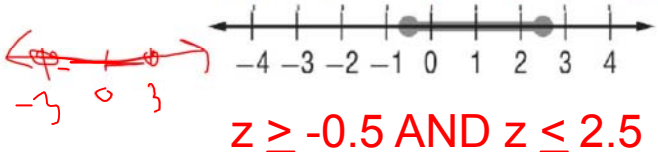
11. $|x-8| \geq 3$ $\{x \mid x \leq 5 \text{ or } x \geq 11\}$





$x-8 \leq -3$ OR $x-8 \geq 3$

12. $|2z-2| \leq 3$ $\left\{z \mid -\frac{1}{2} \leq z \leq \frac{5}{2}\right\}$



$z \geq -0.5$ AND $z \leq 2.5$

$2z-2 \geq -3$

$2z \geq -1$

$2z-2 \geq -3$ And $2z-2 \leq 3$

you go from

how many spaces

$|x - (\_\_)| \_\_\_\_$

$|x - (-5)| \leq 3$

$|x+5| \leq 3$

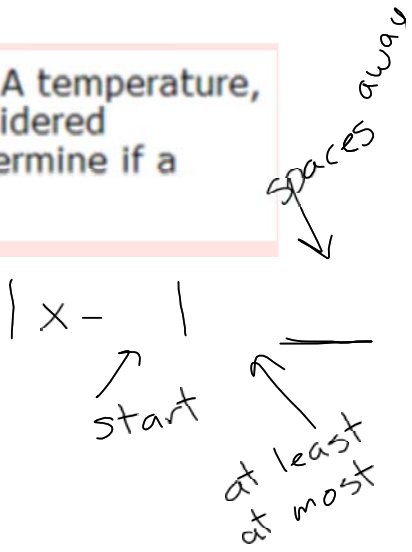
$|x - (20)| \geq 5$

at least 5 away from 20

$|x - (\_\_)| \_\_\_\_$

The "normal" human body temperature is 98.6°F. A temperature, x, that differs from normal by at least 2°F is considered unhealthy. Which inequality could be used to determine if a temperature is unhealthy?

$|x - 98.6| \geq 2$



A clothing designer is selecting models to walk the runway for her fashion show. The designer prefers models that are no more than 3 inches away from being 5'10". Since 5'10" is the same as 70", which inequality could be used to determine if a model's height, x, is within the designer's preferred height range?

$|x - 70| \leq 3$

$|x + 1| \geq 2$

$|x - (-1)| \geq 2$

$|x - 2| \leq 1$

$|x - 3| \geq 4$

$|x + 2| \geq 5$

7. $2x - 3 > 15$ or $3 - 7x < 17$ {x | x > −2}

x > -2

$2x - 3 > 15$

$+3 \quad +3$

$\frac{2x}{2} > \frac{18}{2}$

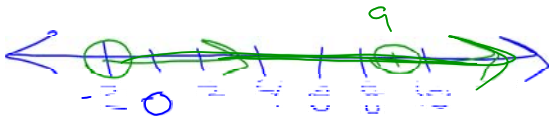
$x > 9$ OR

$3 - 7x < 17$

$-3 \quad -3$

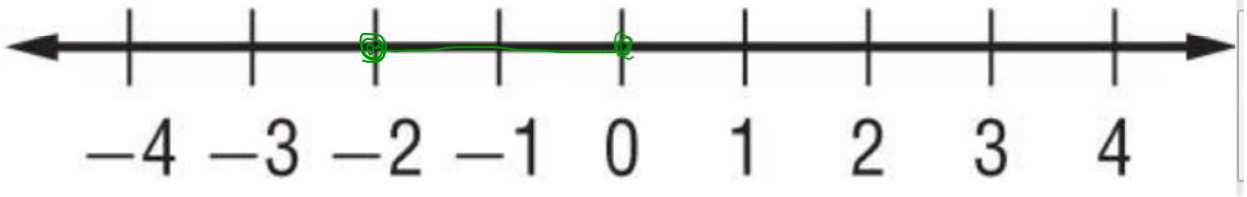
$\frac{-7x}{-7} < \frac{14}{-7}$

$x > -2$

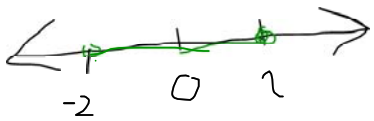


13. $|2x + 2| - 7 \leq -5$

$+7 \quad +7$



$|2x+2| \leq 2$



$2x + 2 \geq -2$ and $2x + 2 \leq 2$

17. RAINFALL In 90% of the last 30 years, the rainfall at Shell Beach has varied no more than 6.5 inches from its mean value of 24 inches. Write and solve an absolute value inequality to describe the rainfall in the other 10% of the last 30 years. $|r - 24| > 6.5$; $\{r \mid r < 17.5 \text{ or } r > 30.5\}$

$|r - 24| > 6.5$

$r - 24 < -6.5$ or $r - 24 > 6.5$

17. RAINFALL In 90% of the last 30 years, the rainfall at Shell Beach has varied no more than 6.5 inches from its mean value of 24 inches. Write and solve an absolute value inequality to describe the rainfall in the other 10% of the last 30 years. $|r - 24| > 6.5$; $\{r \mid r < 17.5 \text{ or } r > 30.5\}$

≤ 6.5

> 6.5

$r - 24 > 6.5$

$r - 24 < -6.5$

18. MANUFACTURING A company's guidelines call for each can of soup produced not to vary from its stated volume of 14.5 fluid ounces by more than 0.08 ounces. Write and solve an absolute value inequality to describe acceptable can volumes. $|v - 14.5| \leq 0.08$; $\{v \mid 14.42 \leq v \leq 14.58\}$

$|c - 14.5| \leq 0.08$

$c - 14.5 \geq -0.08$ and $c - 14.5 \leq 0.08$

18. **MANUFACTURING** A company's guidelines call for each can of soup produced not to vary from its stated volume of 14.5 fluid ounces by more than 0.08 ounces. Write and solve an absolute value inequality to describe acceptable can volumes. $|v - 14.5| \leq 0.08$; $\{v \mid 14.42 \leq v \leq 14.58\}$

$|x - (\ )| \quad (\ )$

$|x - 14.5| \leq 0.08$

$x - 14.5 \geq -0.08$ AND $x - 14.5 \leq 0.08$

$x \geq 14.42$ AND $x \leq 14.58$

Homework

Worksheet back of 1.6 sheet
only OR inequalities