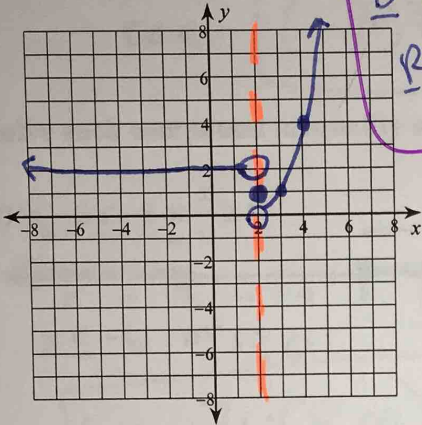


AFM UNIT 1 MIDTERM REVIEW

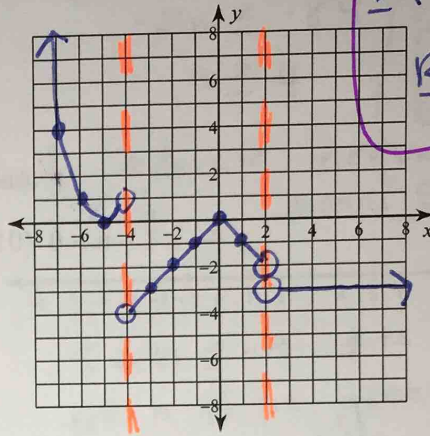
Name Kay 2017

Sketch the graph of each function. State the domain and range.

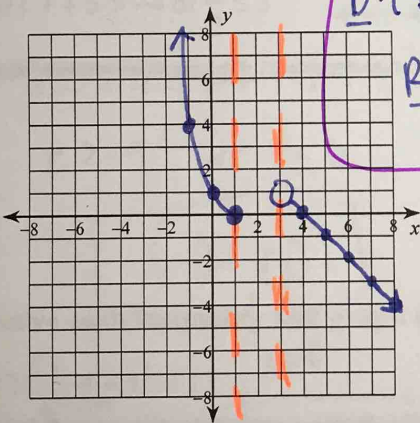
$$1) f(x) = \begin{cases} 2, & x < 2 \\ \frac{|x|}{2}, & x = 2 \\ (x-2)^2, & x > 2 \end{cases}$$



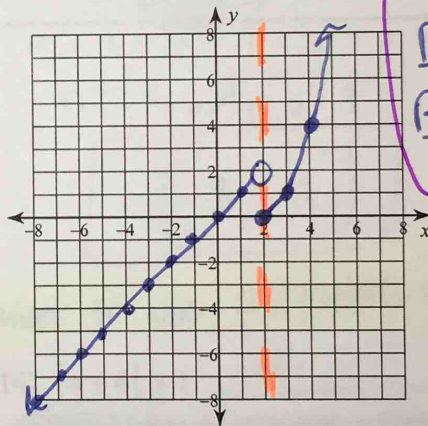
$$2) g(x) = \begin{cases} (x+5)^2, & x < -4 \\ -|x|, & -4 < x < 2 \\ -3, & x > 2 \end{cases}$$



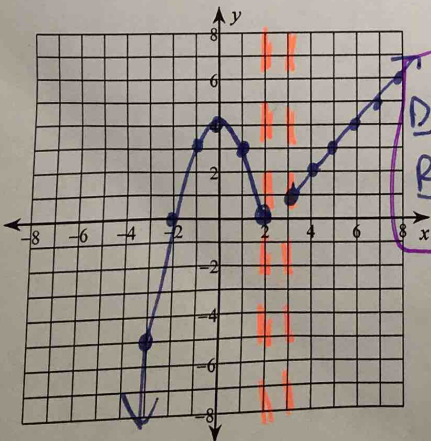
$$3) f(x) = \begin{cases} (x-1)^2, & x \leq 1 \\ -x+4, & x > 3 \end{cases}$$



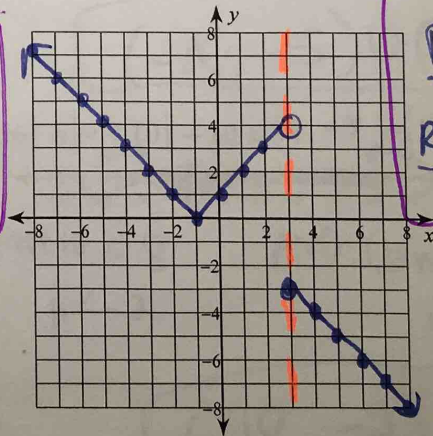
$$4) f(x) = \begin{cases} x, & x < 2 \\ (x-2)^2, & x \geq 2 \end{cases}$$



$$5) f(x) = \begin{cases} 4-x^2, & x \leq 2 \\ x-2, & x \geq 3 \end{cases}$$



$$6) w(x) = \begin{cases} |x+1|, & x < 3 \\ -|x|, & x \geq 3 \end{cases}$$

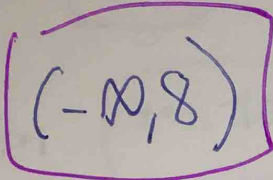


Solve each inequality and graph its solution.

7)  $-2(1 + 5r) > -82$



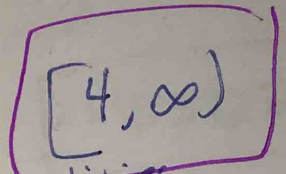
$1 + 5r < 41$   
 $5r < 40$   
 $r < 8$



8)  $-8(1 + 2a) - 5a \leq -92$

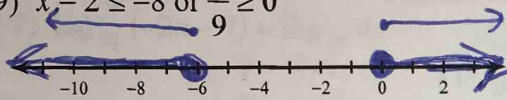


$-8 - 16a - 5a \leq -92$   
 $-21a \leq -84$   
 $a \geq 4$

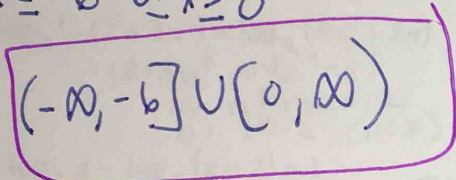


Solve each compound inequality and graph its solution.

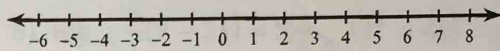
9)  $x - 2 \leq -8$  or  $\frac{x}{9} \geq 0$



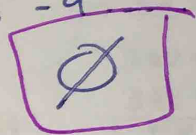
$x \leq -6$  or  $x \geq 0$



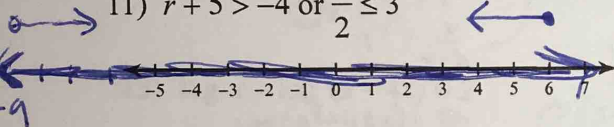
10)  $0 < n + 5 \leq -4$



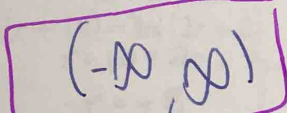
$-5 < n \leq -9$  its not possible for n to be greater than -5 but less than -9



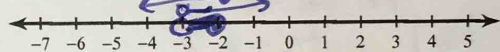
11)  $r + 5 > -4$  or  $\frac{r}{2} \leq 3$



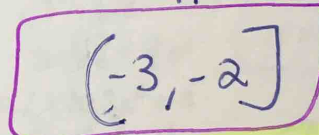
$r > -9$  or  $r \leq 6$



12)  $-8n \geq 16$  and  $10 + n > 7$

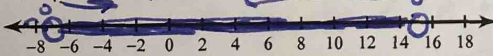


$n \leq -2$  and  $n > -3$

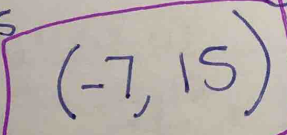


Solve each inequality and graph its solution. **remember to use RHYMING WORDS!**

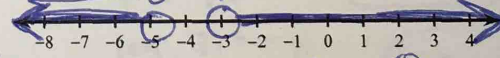
13)  $|-4 + x| < 11$



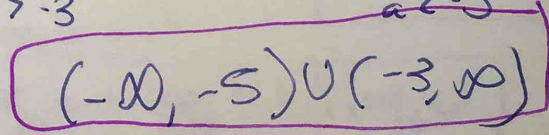
(a)  $-4 + x < 11$  AND (b)  $-4 + x > -11$   
 $x < 15$  AND  $x > -7$



14)  $|a + 4| > 1$

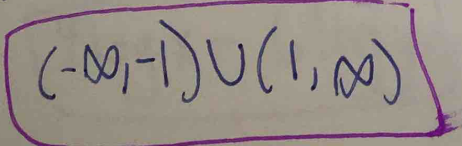


(a)  $a + 4 > 1$  OR (b)  $a + 4 < -1$   
 $a > -3$  OR  $a < -5$



15)  $4 + 4|-3k| > 16$   
 $4|-3k| > 12$   
 $|-3k| > 3$

(a)  $-3k > 3$  OR (b)  $-3k < -3$   
 $k < -1$  OR  $k > 1$



16)  $6|n + 10| - 10 < 38$   
 $6|n + 10| < 48$   
 $|n + 10| < 8$

(a)  $n + 10 < 8$  AND (b)  $n + 10 > -8$   
 $n < -2$  AND  $n > -18$

