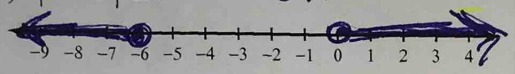
AFM UNIT 8 - HW 2 Name Key

Abs Value Inequalities, Domain and Range

Solve each inequality and graph its solution. Write your answer in interval notation.

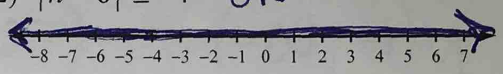
1) $|r+3| \geq 3$ OR



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

$(-\infty, -6] \cup [0, \infty)$

2) $|n-6| \geq -4$ OR



$\mathbb{R}$

$(-\infty, \infty)$

3) $|3-8x| \geq 3$ OR

$x \leq 0$ $x \geq 3/4$

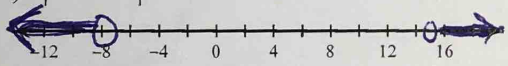
$(-\infty, 0] \cup [3/4, \infty)$

4) $|4n-7| < 19$ AND

$n > -3$ $n < 13/2$

$(-3, \frac{13}{2})$

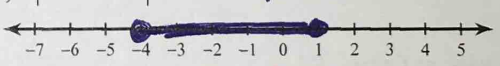
5) $|7-2x| > 23$ OR



$x < -8$ $x > 15$

$(-\infty, -8) \cup (15, \infty)$

6) $|-9-6x| \leq 15$ AND



$x \geq -4$ $x \leq 1$

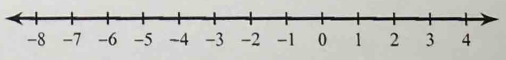
$[-4, 1]$

7) $-2|-6k-8| > -52$ AND

$-\frac{17}{3} < k$ $k < 3$

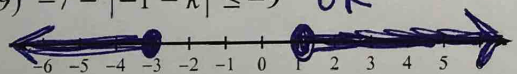
$(\frac{-17}{3}, 3)$

8) $|-10+6p|+4 < -78$ AND



$\emptyset$

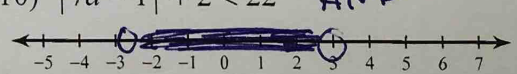
9) $-7-|-1-k| \leq -9$ OR



$k \leq -3$ $k \geq 1$

$(-\infty, -3] \cup [1, \infty)$

10) $|7a-1|+2 < 22$ AND



$-\frac{19}{7} < a$ $a < 3$

$(-\frac{19}{7}, 3)$

ermine the domain of each. Show any work necessary to find domain. Write your answer in interval notation.

11. $f(x) = 1 - 2x^2$

$(-\infty, \infty)$

12. $g(x) = -\sqrt{x+4}$

$[-4, \infty)$

13. $h(x) = \frac{4}{x+1}$

$(-\infty, -1) \cup (-1, \infty)$

14. $f(x) = 2x - 3$

$(-\infty, \infty)$

15. $r(x) = x^2 + 6$

$(-\infty, \infty)$

16. $y = 2\sqrt{x-3}$

$[3, \infty)$

17. $h(x) = \frac{2x}{x^2+1}$

$(-\infty, \infty)$

18. $y = x^3 - 3x + 2$

$(-\infty, \infty)$

19. $f(x) = \sqrt[3]{-x-3}$

$(-\infty, \infty)$

20. $f(x) = \frac{x+4}{x-3}$

$(-\infty, 3) \cup (3, \infty)$

21. $f(x) = |x + 3|$

$(-\infty, \infty)$

22. $g(x) = -|x - 1|$

$(-\infty, \infty)$