5.5 Non-linear Inequalities Name_____

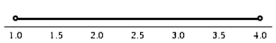
Solve and graph the solution set.

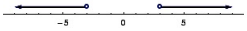
1. $x^2 - 5x + 4 < 0$

2. $x^2 - 3x - 4 < 0$

3. $x^2 - 9 > 0$

4. $x^2 - 4 > 0$

Answers: **1.** (1, 4) 

; **3**. $(-\infty, -3) \cup (3, \infty)$ 

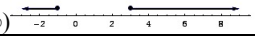
Solve and graph the solution set.

5. $x^2 - 2x \geq 3$

6. $x^2 - 10x \geq 24$

7. $x^2 + 9 < 0$

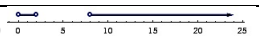
8. $x^2 + 4 < 0$

Answers: **5**. $(-\infty, -1] \cup [3, \infty)$  ; **7**. $\varnothing$

Solve and graph the solution set.

9. $\dfrac{3}{x-2} < \dfrac{4}{x}$

10. $\dfrac{1}{x+1} < \dfrac{2}{x}$

Answer: **9**. $(0, 2) \cup (8, \infty)$ 

Solve and graph the solution set.

11. $\dfrac{x}{x+4} > \dfrac{1}{x+1}$

12. $\dfrac{x}{x+9} > \dfrac{1}{x+1}$

Answer: **11**. $(-\infty, -4) \cup (-2, -1) \cup (2, \infty)$