Books, notes (in any form), and calculators are not allowed. *Show all your work.* Good Luck!

1. (2 pts) Write an equation of a line that passes through the point $(2, -4)$ and has a slope of -3.

2. (4 pts) Given $f(x) = \dfrac{2x - 1}{x}$ and $g(x) = x + 3,$

(a). Find and simplify $f \circ g$.

(b). State the domain for $f \circ g$.

3. (3 pts) Determine whether the following function is odd, even, or neither. Show work to justify your answer.

$$f(x) = \frac{x}{x^2 - 4}$$

4. (6 pts) Solve the following inequality for x. Write your solution in interval notation <u>and</u> graph it on the number line.

$x^2 - 4x < 5.$