

Name: _____

Books and notes are **not** allowed. *Show all your work and clearly indicate your answers.* Good Luck!

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

(a). Find $(f \cdot g)(x)$

(b). Find $(f \circ g)(x) = f(g(x))$

2. (4 pts) Find the domain and range for $y = \sqrt{x^2 + 1}$.

Show your work for determining the domain.

3. (4 pts) Write an equation of a line passing through the points $(-3, 4)$ and $(2, 3)$

4. (1 pts) What is the slope of a line perpendicular to the line $y = 4x + 5$

5. (4 pts) Given $2x + 7y = 8$

(a). Find the x - and y - intercepts. [Show all your work]

(b). Graph the line and clearly label the intercepts.

6. (3 pts) The the amount billed by the gas company is given by the equation $y = 7.15 + 0.64x$ where x is the number of therms used. If you gas bill was \$65.20, how many therms of gas did you use?