Name: _____ Section: _____

Clear your desk of everything except pens, pencils and erasers. Show all your work. If you have a question raise your hand and I will come to you.

1. (5 points) A tank filled with oil is in the shape of a downward pointing cone with its vertical axis perpendicular to ground level. The height of the tank is 4 feet, the circular top of the tank has radius 2 feet, and the oil inside of the tank weighs 50 pounds per cubic foot. How much Work, W, would it take to pump oil from the tank to a level 2 feet above the top of the tank if the tank were completely full? Set up but do not solve the integral.

2. (5 points) Let $f(x) = x^3 + 2x^2 + 3$, for x > 0. Find $(f^{-1})'(6)$ at the point x = 6 = f(1).