Name: $\qquad$

## 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 $f(x)=x^{3}+2 x^{2}+3$, for $x>0$. Find $\left(f^{-1}\right)^{\prime}(6)$ at the point $x=6=f(1)$.
