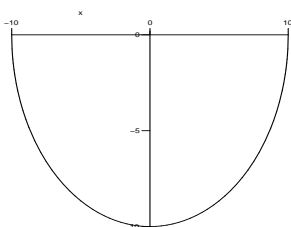


PRACTICE4

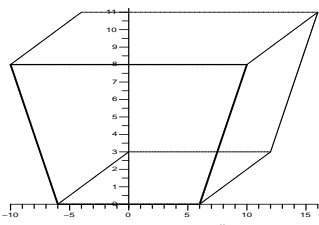
Name _____ Section _____

1. Determine the work to empty the water from a filled semi-spherical swimming pool with radius 10 ft.



2. A cable that weighs 2 lb/ft is used to lift 800 lb of coal up a mine shaft 500 ft deep. Find the work done.
3. A spring has natural length 20 cm. If a 25-N force is required to keep it stretched to a length of 30 cm (determining k , the spring constant), how much work is required to stretch it from 20 cm to 25 cm?

4. SET UP (do not evaluate) the integral to determine the force on the trapezoidal side of the tank filled with water that has a rectangular bottom with length 12 ft and width 10 ft and rectangular top with length 20 ft and width 10 ft. The tank is 8 ft deep from bottom to top.



5. SET UP (do not evaluate) the integral to determine the work to empty this trapezoidal tank.

6. Determine the arclength of the curve $f(x) = \frac{x^2}{2} - \frac{\ln x}{4}$ for $1 \leq x \leq 4$.