

Answers to Even Exercises, Homework Set 8

Section 12.4 # 6 $\int_{\frac{\pi}{4}}^{\frac{5\pi}{4}} \int_0^3 f(r \cos \theta, r \sin \theta) r dr d\theta$

18 $32\sqrt{3}\pi$

30 (a) total water per hour = $2\pi[1 - e^{-R}(1+R)]$, and (b) the average water per hour per square foot is = $\frac{1}{\pi R^2}$ *Total water = $2/R^2 - 2e^{-R}(1/R^2 + 1/R)$

Section 12.5# 18 $I_x = 8/3(2.2)$, $I_y = 16/3 + 0.8$, and since $I_y > I_x$ it requires more force to rotate the fan blad about the y-axis.