Answers to Worksheet 17 - Solids of Revolution with Disks

1) $\pi \int_{-1}^{0} \left(x^2 + 2\right)^2 dx$

$= \dfrac{83}{15}\pi \approx 17.383$

2) $\pi \int_{0}^{1} \left(\sqrt[3]{x}\right)^2 dx$

$= \dfrac{3}{5}\pi \approx 1.885$

3) $\pi \int_{0}^{1} \left(y^3\right)^2 dy$

$= \dfrac{1}{7}\pi \approx 0.449$

4) $\pi \int_{0}^{1} \left(\sqrt{y}\right)^2 dy$

$= \dfrac{1}{2}\pi \approx 1.571$

5) $\pi \int_{0}^{1} \left(y^3\right)^2 dy$

$= \dfrac{1}{7}\pi \approx 0.449$

6) $\pi \int_{-1}^{1} \left(x^2 + 3\right)^2 dx$

$= \dfrac{112}{5}\pi \approx 70.372$

7) $\pi \int_{-1}^{1} \left(-x^2 + 1\right)^2 dx$

$= \dfrac{16}{15}\pi \approx 3.351$

8) $\pi \int_{0}^{1} \left(-x^2 + 1\right)^2 dx$

$= \dfrac{8}{15}\pi \approx 1.676$

9) $\pi \int_{-2}^{2} \left(-y^2 + 4\right)^2 dy$

$= \dfrac{512}{15}\pi \approx 107.233$

10) $\pi \int_{0}^{2} \left(y^2 + 3\right)^2 dy$

$= \dfrac{202}{5}\pi \approx 126.92$