

Book Problems:

- Chap 4.5 Exercises 2, 8, 14
- Chap 5.2 Exercises 16, 20, 56
- Chap 5.4 Exercises 42, 44, 46
- Chap 5.6 Exercises 8, 16
- Chap 6.1 Exercises 2, 14, 30

Additional Problems:

A1. Let $r > 0$ be constant. In this problem you will evaluate the following integral in two different ways:

$$\int_{-r}^r \sqrt{r^2 - x^2} dx$$

- Interpret this integral as the area of a shape you know.
- Use the substitution $x = r \sin \theta$ and the trigonometric identities

$$1 - \sin^2 \theta = \cos^2 \theta \quad \text{and} \quad \cos^2 \theta = \frac{1}{2} \cos(2\theta) + \frac{1}{2}.$$

Then use the substitution $u = 2\theta$.