5.4 Group Activity Problems

4. Suppose f is an odd function, $\int_0^4 f(x)\,dx = 3$, and $\int_0^8 f(x)\,dx = 9$.

a. Evaluate $\int_{-4}^{8} f(x)\,dx$. **b.** Evaluate $\int_{-8}^{4} f(x)\,dx$.

11–24. Symmetry in integrals *Use symmetry to evaluate the following integrals.*

16. $\int_{-\pi}^{\pi} t^2 \sin t\,dt$

20. $\int_{-1}^{1} (1 - |x|)\,dx$

22. $\int_{-\pi/4}^{\pi/4} \tan\theta\,d\theta$

45. Explain why or why not Determine whether the following statements are true and give an explanation or counterexample.

a. If f is symmetric about the line $x = 2$, then $\int_0^4 f(x)\,dx = 2\int_0^2 f(x)\,dx$.