

Name _____

14-5 Lesson Master**Questions on SPUR Objectives**

See Student Edition pages 862–865 for objectives.

SKILLS Objective A

In 1–5, evaluate the definite integral.

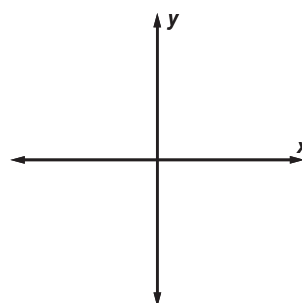
1. $\int_0^4 x^2 dx$ _____ 2. $\int_{-4}^4 x^2 dx$ _____ 3. $\int_{-4}^6 -x^2 dx$ _____
4. $\int_0^7 (2x^2 - 3x + 1) dx$ _____ 5. $\int_0^{12} (x^2 + 9x - 4) dx$ _____

USES Objective E

6. Suppose a biker's velocity for the first 45 seconds of a race is given by $f(x) = -0.017(45 - x)^2 + 35.2$, where x is the number of seconds after the start of the race.
- Write the equation for the velocity function in standard form. _____
 - Use integral notation to express the distance traveled by the biker in the first 45 seconds of the bike race. _____
 - Evaluate your integral in Part a to find the distance traveled by the biker in these 45 seconds. _____
7. Suppose the velocity (in $\frac{\text{m}}{\text{s}}$) of an object after t seconds is given by $v(t) = 5t^2 + 9t + 12$. Find the total distance traveled by the object from $t = 4$ seconds to $t = 8$ seconds. _____

REPRESENTATIONS Objective I

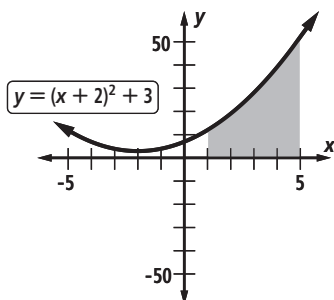
8. a. On the axes at the right, sketch the region bounded by the parabola $y = 16 - x^2$, the y -axis, the line $x = 3$, and the line $y = 1$.



- b. Find the area of the region you sketched in Part a. _____

In 9 and 10, find the area of the shaded region.

9.



10.

