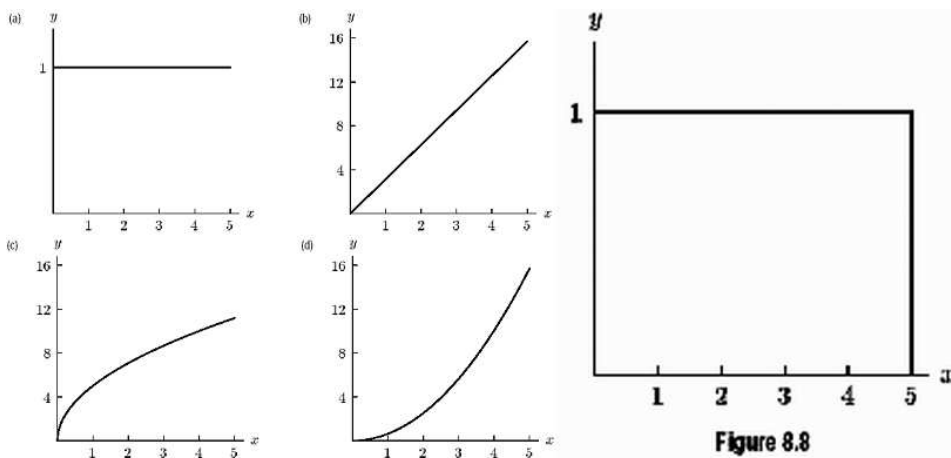


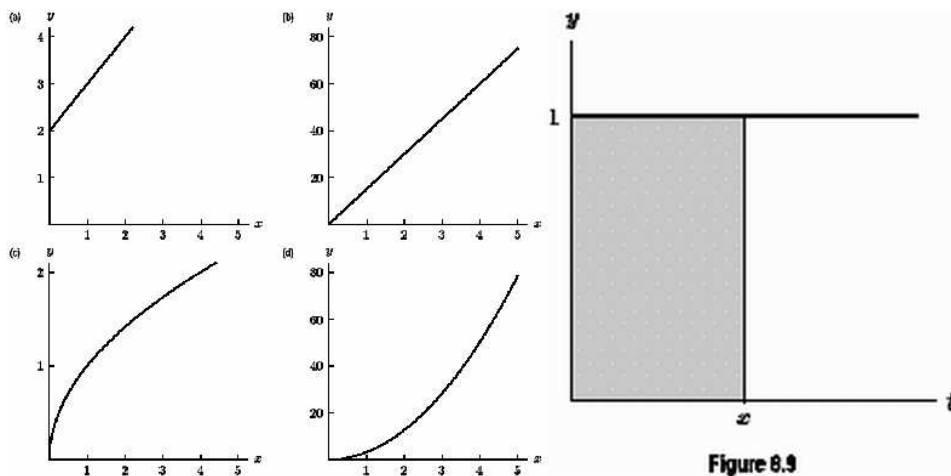
Classroom Voting Questions: Calculus II

Section 8.2 Applications to Geometry

1. **True or False** The volume of the solid of revolution is the same whether a region is revolved around the x -axis or the y -axis.
2. Imagine taking the enclosed region in Figure 8.8 and rotating it about the x -axis. Which of the following graphs (a)-(d) represents the resulting volume as a function of x ?



3. Imagine taking the enclosed region in Figure 8.9 and rotating it about the y -axis. Which of the following graphs (a)-(d) represents the resulting volume as a function of x ?



4. Imagine that the region between the graphs of f and g in Figure 8.10 is rotated about the x -axis to form a solid. Which of the following represents the volume of this solid?

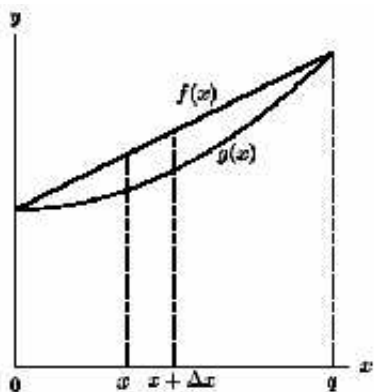


Figure 8.10

- (a) $\int_0^q 2\pi x(f(x) - g(x))dx$
 (b) $\int_0^q (f(x) - g(x))dx$
 (c) $\int_0^q \pi(f(x) - g(x))^2 dx$
 (d) $\int_0^q (\pi f^2(x) - \pi g^2(x))dx$
 (e) $\int_0^q \pi x(f(x) - g(x))dx$

5. Imagine rotating the enclosed region in Figure 8.11 about three lines separately: the x -axis, the y -axis, and the vertical line at $x = 6$. This produces three different volumes. Which of the following lists those volumes in order from largest to smallest?

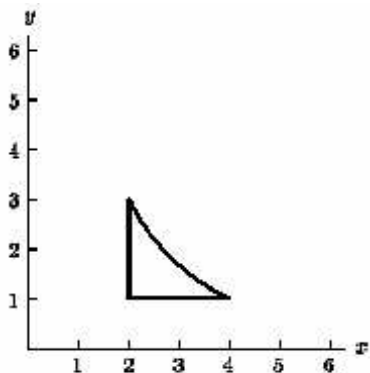


Figure 8.11

- (a) x -axis; $x = 6$; y -axis
 (b) y -axis; $x = 6$; x -axis
 (c) $x = 6$; y -axis; x -axis
 (d) $x = 6$; x -axis; y -axis
 (e) x -axis; y -axis; $x = 6$
 (f) y -axis; x -axis; $x = 6$