Wednesday, January 21

# Clicker Questions

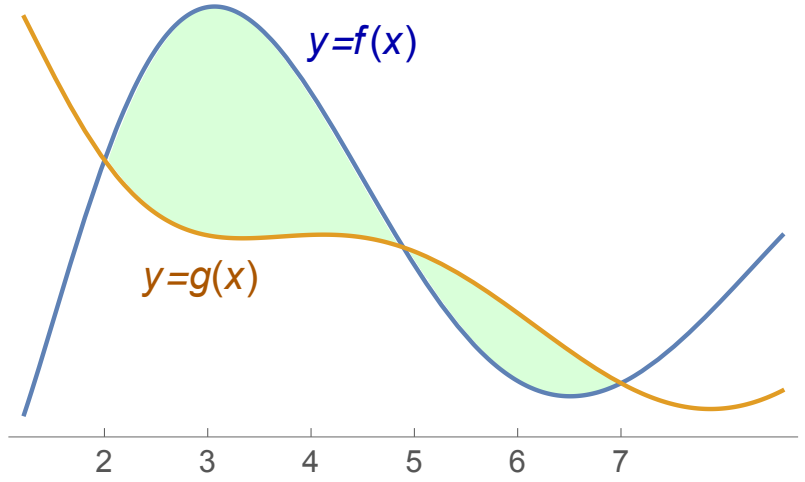
# Clicker Question 1

## Race to the top

Suppose we know:

- $\int_2^5 f(x)\,dx = 11$
- $\int_2^5 g(x)\,dx = 7$
- $\int_5^7 f(x)\,dx = 2$
- $\int_5^7 g(x)\,dx = 3$

What is the shaded area?




A. 5 $= \int_2^5 (f(x) - g(x))\,dx + \int_5^7 (g(x) - f(x))\,dx$

B. 14

C. 23

D. 3

E. none of the above

# Clicker Question 2

## Solid of revolution

What is the general formula for the volume of the solid formed by rotating, around the $x$-axis, the graph of $y = f(x)$ between $x = a$ and $x = b$? (Assume $f(x) \geq 0$.)

A. $\displaystyle\int_{a^2}^{b^2} \pi (f(x))^2 \, dx$

B. $\displaystyle\int_{a}^{b} \pi f(x) \, dx$

C. $\displaystyle\int_{a}^{b} \pi (f(x))^2 \, dx$

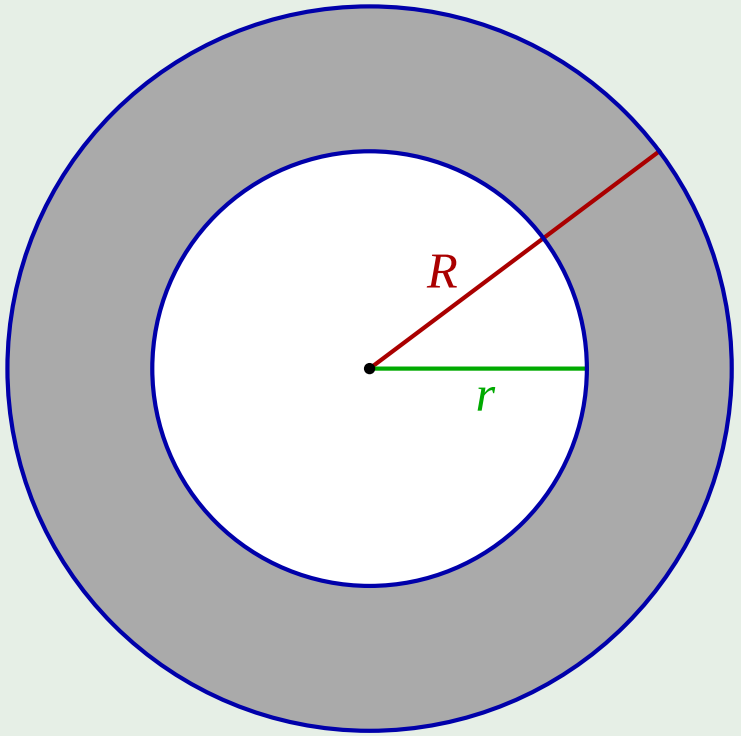
D. $\displaystyle\int_{a^2}^{b^2} \pi f(x) \, dx$

E. none of the above

# Clicker Question 3

## Another formula from geometry

What is the area of an annulus with outer radius $R$ and inner radius $r$?




A. $\pi(R-r)^2$

B. $\frac{1}{2}\pi Rr$

C. $\frac{1}{2}\pi(R+r)$

D. $\pi(R^2-r^2)$

E. none of the above