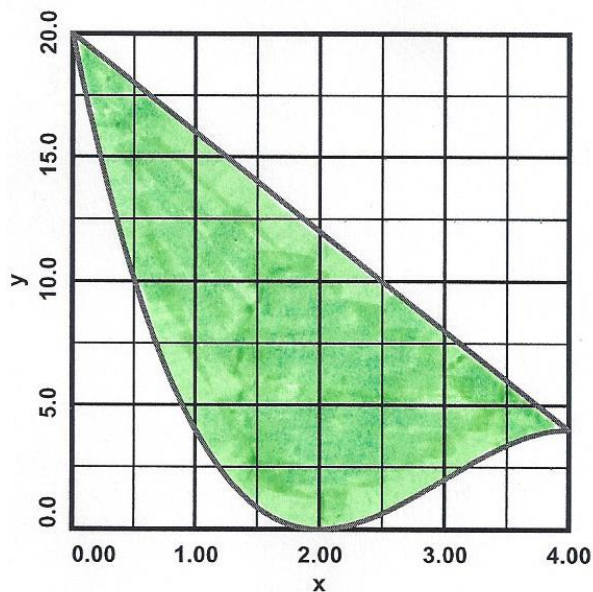


AP CALCULUS AB

- 1) Find the shaded area between the curves

$$f(x) = -4x + 20 \text{ and}$$

$$g(x) = -x^3 + 9x^2 - 24x + 20.$$

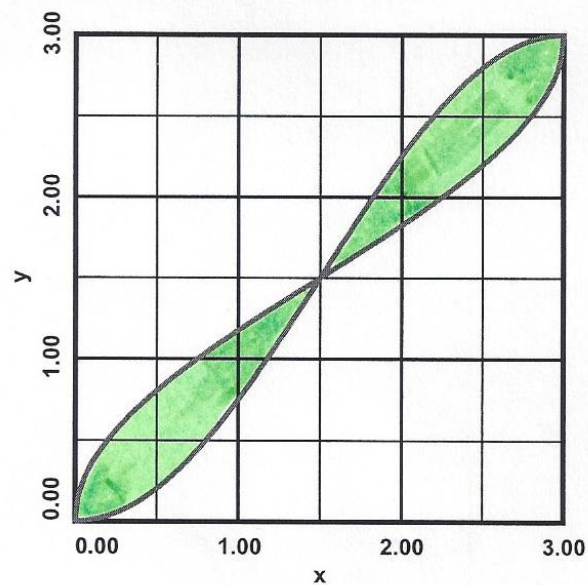


AREAS BETWEEN CURVES

- 2) Find the shaded area between the curves

$$f(x) = 3 - \frac{3}{\pi} \cos^{-1} \left[\frac{1}{3}(2x - 3) \right] \text{ and}$$

$$g(x) = \frac{3}{2} \left[1 - \cos \left(\frac{\pi x}{3} \right) \right].$$



Recall that

$$\int \cos^{-1} u \, du = u \cos^{-1} u - \sqrt{1 - u^2}.$$

- 3) Find the shaded area two ways, *viz.*,
- a) by integrating with respect to x , and
 - b) by integrating with respect to y .

The curve in the figure has the equation $f(x) = \sqrt{x}$.

