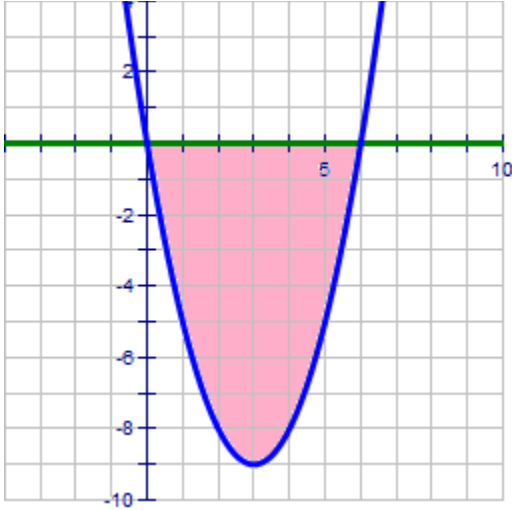


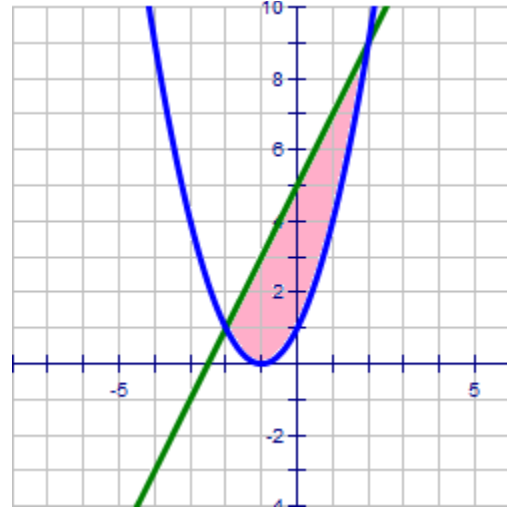
PART 1: AREA UNDER A CURVE REVIEW

Directions: Find the area of the shaded region WITHOUT the use of a calculator.

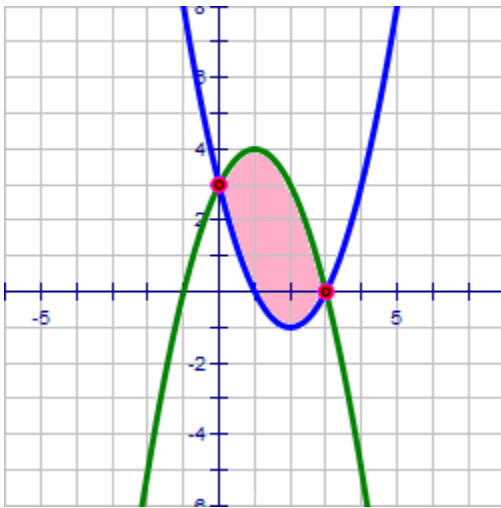
1.) $f(x) = x^2 - 6x$ $g(x) = 0$



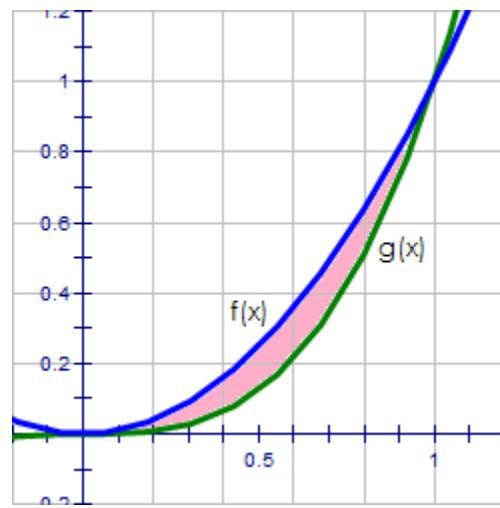
2.) $f(x) = x^2 + 2x + 1$ $g(x) = 2x + 5$



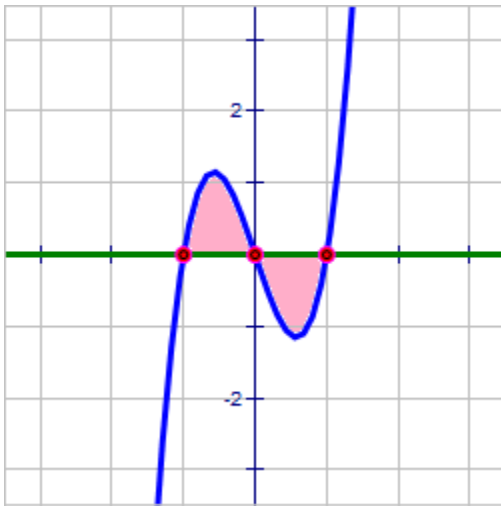
3.) $f(x) = x^2 - 4x + 3$ $g(x) = -x^2 + 2x + 3$



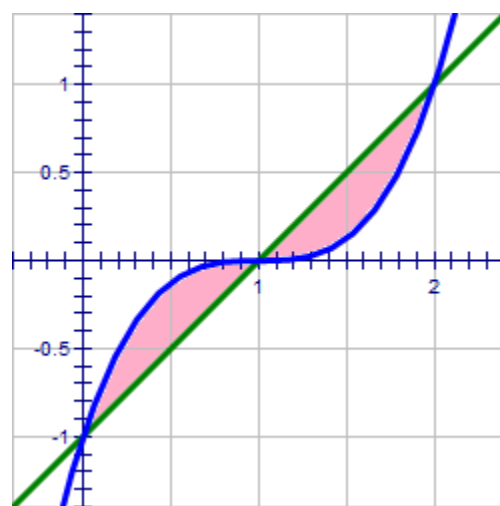
4.) $f(x) = x^2$ $g(x) = x^3$



5.) $f(x) = 3(x^3 - x)$ $g(x) = 0$



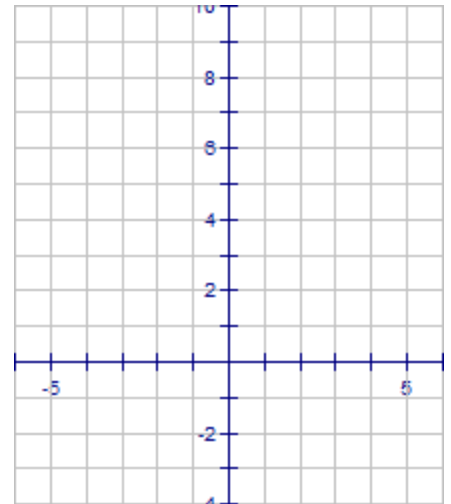
6.) $f(x) = (x - 1)^3$ $g(x) = x - 1$



Directions: Sketch and find the area of the enclosed region.

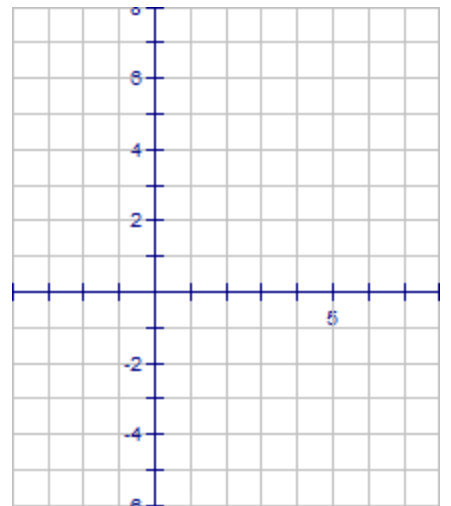
7.) $y = x^2 - 4x + 5$

$y = -x + 5$



8.) $y = 5x - x^2$

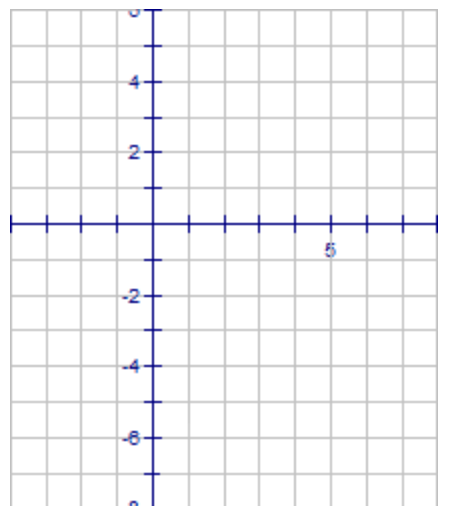
$y = 0$



9.) $y = \sqrt{x}$

$x = 0$

$y = x - 3$

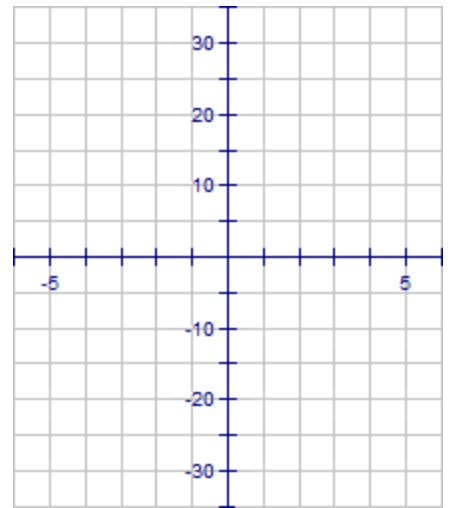


$$10.) y = x^3$$

$$x = -3$$

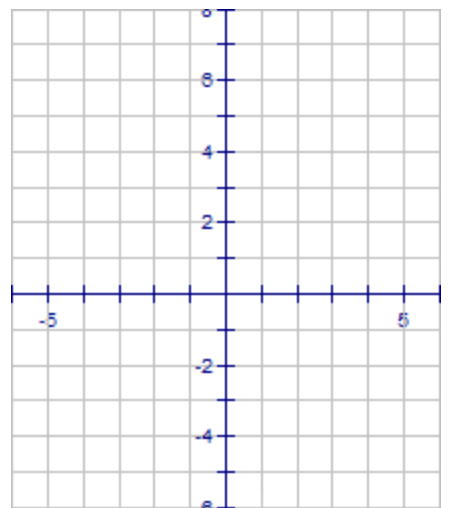
$$y = 0$$

$$x = 3$$



$$11.) x = y^2 - 2y$$

$$x = y$$

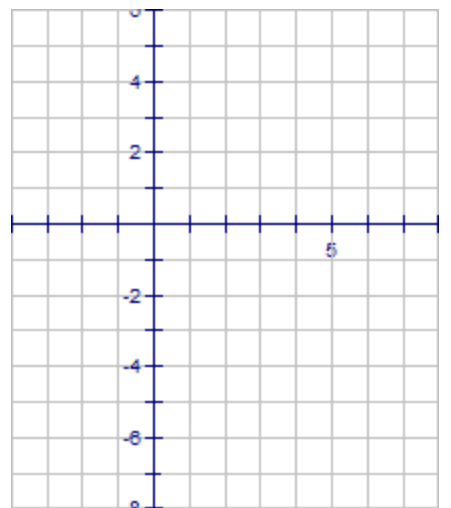


CHALLENGE: Draw a sketch and setup an integral that would find the area of the enclosed region. (DO NOT SOLVE!)

$$y = \sqrt{x}$$

$$y = -x + 6$$

$$y = 0$$



SOLUTIONS

1.) $A = 36$

2.) $A = \frac{32}{3}$ or $10.\bar{6}$

3.) $A = 9$

4.) $A = \frac{1}{12}$ or $0.08\bar{3}$

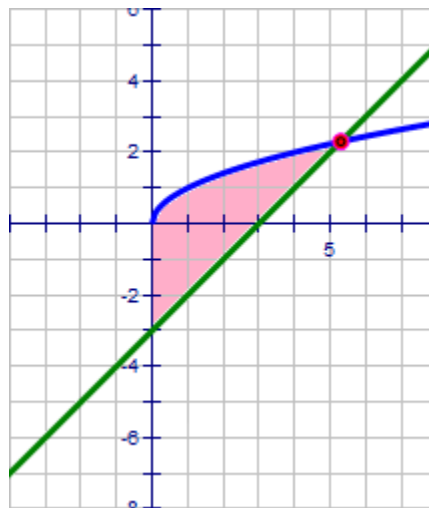
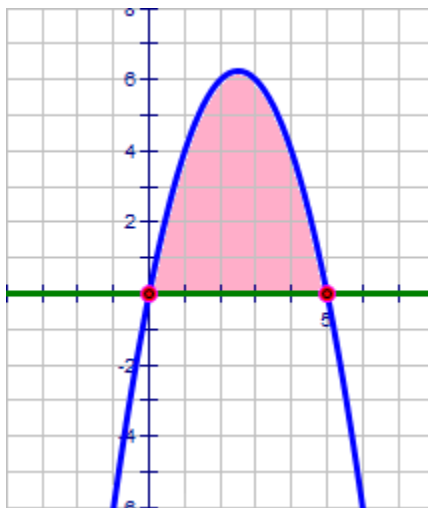
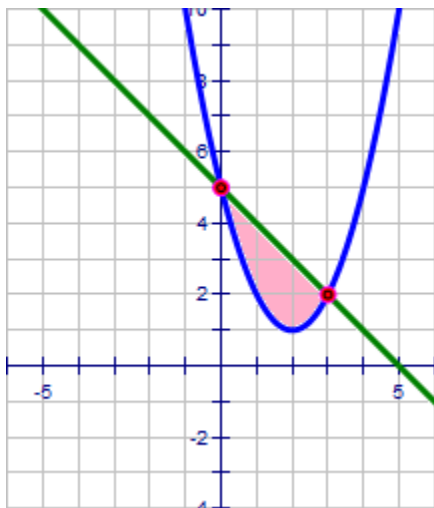
5.) $A = 1.5$

6.) $A = \frac{1}{2}$ or 0.5

7.) $A = \frac{9}{2}$ or 4.5

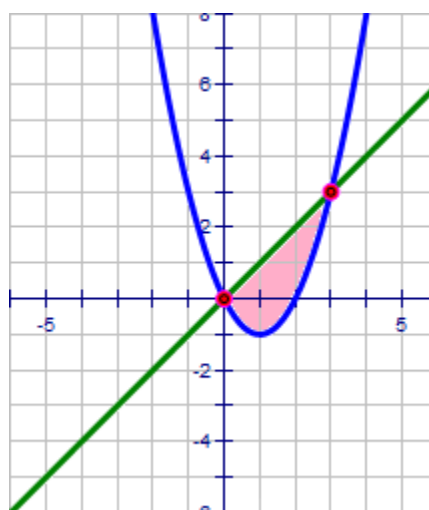
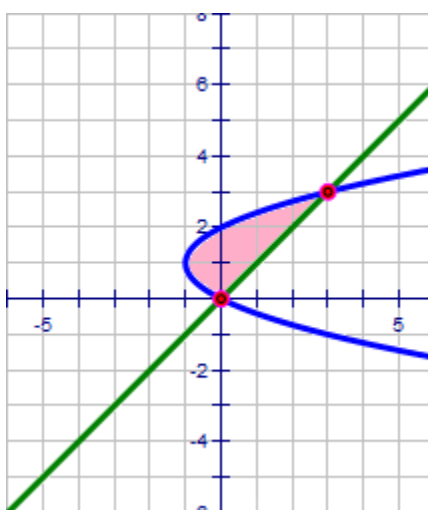
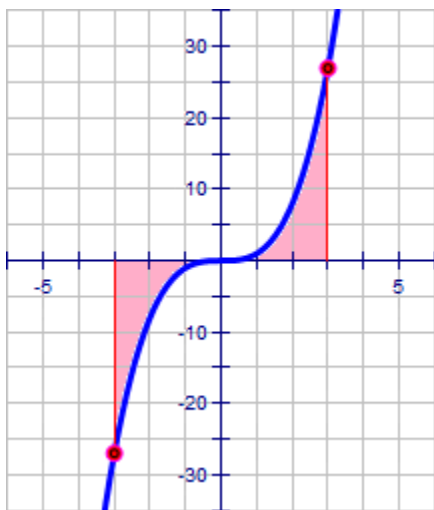
8.) $A = \frac{125}{6}$ or $20.8\bar{3}$

9.) $A \approx 9.989$



10.) $A = \frac{81}{2}$ or 40.5

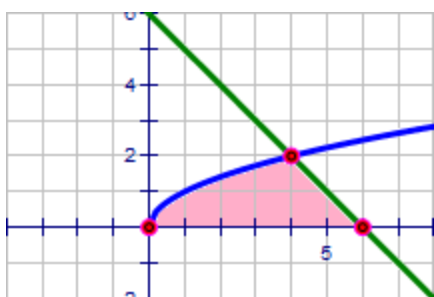
11.) $A = \frac{9}{2}$ or 4.5



Horizontal Bounds

Vertical Bounds

CHALLENGE:



$$A = \int_0^4 \sqrt{x} \, dx + \int_4^6 (-x + 6) \, dx$$