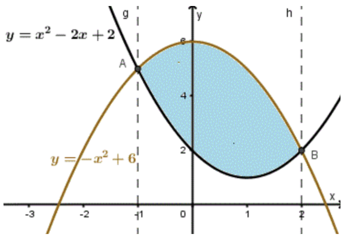
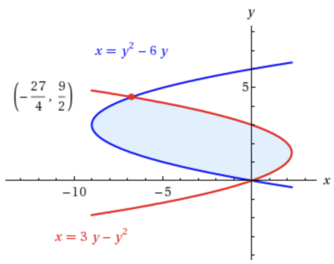
7.1 Notes and Examples

Name: Block: Seat:

Area of a Region Between Two Curves



Vertically:



Horizontally:

1. (a) Finally in our last chapter, we extend ________________ integrals from the area __________ a curve to the area __________ two or more curves.

   (b) Sometimes we want __________ slices, and sometimes __________, and sometimes either approach will work.

   (c) We often will need to find points of ________________ for the upper and lower bounds of our integral, and sometimes we have to divide the area in __________ and add together two or more integrals to find the __________.

2. Find the area between $y = 6 - x^2$ and $y = x^2 - 2x + 2$

3. Find the area between $x = y^2 - 6y$ and $x = 3y - y^2$

4. Find the area between $y = 3 - x^2$ and $y = 1 - x$

5. Find the area between $x = 5 - y^2$ and $x = y - 1$

6. This could be solved a couple of ways: a single integral with horizontal slices, or the sum of two pieces using vertical slices: Find the area between $y = \ln x$ and $y = 5 - x$. (Calculator Active)

7. Find the area between $y = \sqrt{x}$ and $y = 6 - x$. (Calculator NOT Active)

8. Here is region Where top and bottom switch: Find the area between $f(x) = 1 + x + e^{x^2-2x}$ and $g(x) = x^4 - 6.5x^2 + 6x + 2$. (Calculator Active)

9. Here is region defined by 3 curves: Find the area between $y = 2^x$, $y = \dfrac{1}{x}$ and $y = 4^x$. (Calculator Active)