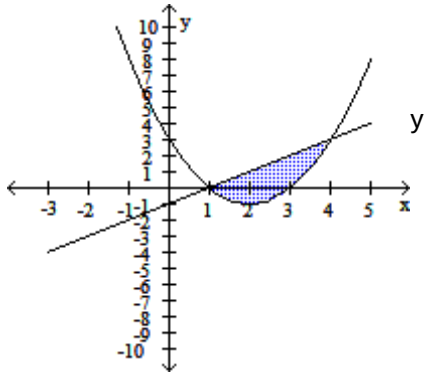
Area/Arc Length HW Quiz A Name_____

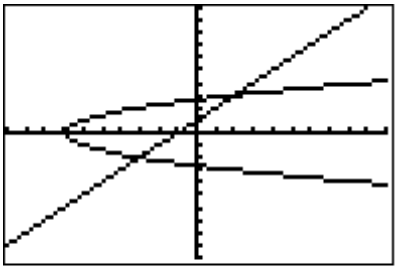
Find the area of the shaded region. Show all of your work that leads to your answer.

1) $y = x^2 - 4x + 3$



$y = x - 1$

2) Find the area of the region between the curve $y^2 = x + 7$ and the line $y = x + 1$. Show all of your work that leads to your answer.



Find the area of the regions enclosed by the line and curve. Show all of your work that leads to your answer.

3) $y = 3x + 4$, $y = x^2 + 4$

Find the area of the regions enclosed by the lines and curves. Set-up the intergral and use your calculator to find the area.

4) $y^2 = x + 5$ and $x = y + 25$

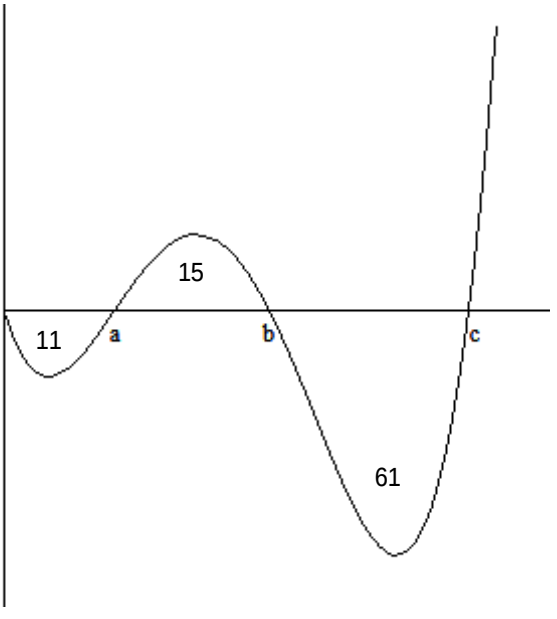
Set up an integral for the length of the curve and then use your calculator to find the length of the curve.

5) $y = x^2 - 3, 5 \le x \le 10$

6) $x = y^2 + 3y, 0 \le y \le 3$

Solve the problem.

7) A particle moves along the x-axis (units in cm). Its initial position at t = 0 sec is x(0) = 19. The figure shows the graph of the particle's velocity v(t). The numbers are the areas of the enclosed regions.



What is the total distance traveled by the particle between t = 0 and t = c?

A) 87 cm B) 106 cm C) -35 cm D) -57 cm