

6. $y = x^2 - 3$ $y = -3x + 1$ $x = -2$ $x = 0$

ABOVE BELOW
 $\int_{-2}^0 (-3x+1) - (x^2-3) dx$

$\int_{-2}^0 (-3x+1 - x^2+3) dx$



$\int_{-2}^0 (-x^2 - 3x + 4) dx$

$\left[-\frac{1}{3}x^3 - \frac{3}{2}x^2 + 4x \right]_{-2}^0$

$0 - \left[-\frac{1}{3}(-2)^3 - \frac{3}{2}(-2)^2 + 4(-2) \right]$

$- \left[\frac{8}{3} - 6 - 8 \right]$

$- \left[\frac{8}{3} - 14 \right] = -\frac{8}{3} + 14$

$\frac{42}{3}$
 $\frac{34}{3}$

$\left(\frac{34}{3} \right)$

7. $f(x) = x^2 + 8x$ $g(x) = 0$

POI's

$x^2 + 8x = 0$

$x(x+8) = 0$

$x = 0$ $x + 8 = 0$

$x = 0$ $x = -8$



ABOVE BELOW
 $\int_{-8}^0 (0) - (x^2+8x) dx$

$\int_{-8}^0 (-x^2 - 8x) dx$

$\left[-\frac{1}{3}x^3 - \frac{8}{2}x^2 \right]_{-8}^0$

$\left[-\frac{1}{3}x^3 - 4x^2 \right]_{-8}^0$

$0 - \left[-\frac{1}{3}(-8)^3 - 4(-8)^2 \right]$

$- \left[\frac{512}{3} - 256 \right]$

$- \frac{512}{3} + 256$

$\left(\frac{256}{3} \right)$

$\frac{256}{3}$
 $\frac{8}{3}$
 $\frac{256}{3}$

$\frac{64}{4}$
 $\frac{4}{6}$

$\frac{256}{3}$
 $\frac{768}{3}$
 $\frac{-512}{3}$
 $\frac{256}{3}$