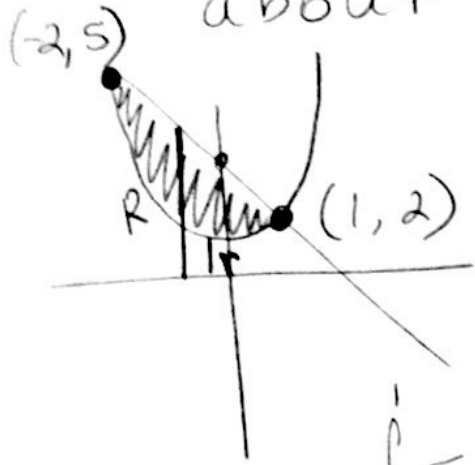


4)  $y = (x^2 + 1)$ ,  $y = -x + 3$

about x-axis



$$x^2 + 1 = -x + 3$$

$$x^2 + x - 2 = 0$$

$$(x + 2)(x - 1) = 0$$

$$x = -2, 1$$

$$\pi \int_{-2}^1 [(-x + 3)^2 - (x^2 + 1)^2] dx$$

$$= \pi \int_{-2}^1 x^2 - 6x + 9 - (x^4 + 2x^2 + 1) dx$$

$$= \pi \int_{-2}^1 (-x^4 - x^2 - 6x + 8) dx$$

$$= \pi \left( -\frac{x^5}{5} - \frac{x^3}{3} - 3x^2 + 8x \Big|_{-2}^1 \right)$$

$$= \frac{117\pi}{5}$$