

2.68
4

$x \rightarrow 4$ $x \rightarrow$ "

השטח הנמצא בין העקומים

$$\frac{1}{4}a^2x + 1 = x^3 - 2ax^2 + \frac{5}{4}a^2x + 1$$

$$x\left(\frac{1}{4}a^2 - x^2 - 2ax - \frac{5}{4}a^2\right) = 0$$

$$-x^2 - 2ax - a^2 = 0$$

$$-(x+a)^2 = 0$$

$$x = -a$$

$$x = 0$$

$$\frac{27}{4} = \left| \int_{-a}^0 \left(\frac{1}{4}a^2x + 1 - x^3 - 2ax^2 - \frac{5}{4}a^2x - 1 \right) dx \right|$$

$$\frac{27}{4} = \left| -\frac{a^2x^2}{2} - \frac{x^4}{4} - \frac{2ax^3}{3} \right|_{-a}^0 = \left| 0 + \frac{a^4}{2} + \frac{a^4}{4} + \frac{2a^4}{3} \right| = \frac{11}{12}a^4$$

$$81 = 11a^4 \rightarrow a = \pm 3$$

$$a = 3 \quad \text{כיון } a > 0$$