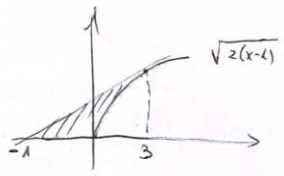
2.50



$y' = \frac{2}{2\sqrt{2x-2}} = \frac{1}{\sqrt{2x-2}}$

$y'(3) = \frac{1}{2}$

משוואת המשיק העובר ב- $(3,2)$ היא $m = \frac{1}{2}$

$y = \frac{1}{2}x + \frac{1}{2}$

$$\pi \int_{-1}^{3} \left(\frac{1}{2}x + \frac{1}{2}\right)^2 dx - \int_{0}^{3} (2x-2)\,dx =$$

$$= \pi \left[\frac{x^3}{12} + \frac{1}{4}x^2 + \frac{1}{4}x \Big|_{-1}^{3} + \left(-x^2 + 2x \Big|_{0}^{3}\right) \right] = \pi \left[\left(\frac{27}{12} + \frac{9}{4} + \frac{3}{4}\right) - \left(\frac{-1}{12} + \frac{1}{4} - \frac{1}{4}\right) + (-9+6) \right] = 2\frac{1}{6}\pi$$

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