

**Zadatak 8.** Odredi površinu lika omeđenog parabolom  $y = 2x - x^2$ , tangentom na parabolu u točki  $(\frac{1}{2}, \frac{3}{4})$  i osi apscisa.

**Rješenje.**  $y' = 2 - 2x$ ,  $y'(\frac{1}{2}) = 1$ ,  $y - \frac{3}{4} = x - \frac{1}{2} \implies y = x + \frac{1}{4}$  tangenta.

$$P = \int_{-1/4}^0 \left(x + \frac{1}{4}\right) dx + \int_0^{1/2} \left(x + \frac{1}{4} - 2x + x^2\right) dx = \left(\frac{x^2}{2} + \frac{1}{4}x\right) \Big|_{-1/4}^0 + \left(\frac{x^3}{3} - \frac{x^2}{2} + \frac{1}{4}x\right) \Big|_0^{1/2} - \frac{1}{32} + \frac{1}{16} + \frac{1}{24} - \frac{1}{8} + \frac{1}{8} = \frac{1}{32} + \frac{1}{24} = \frac{3+4}{96} = \frac{7}{96}.$$

