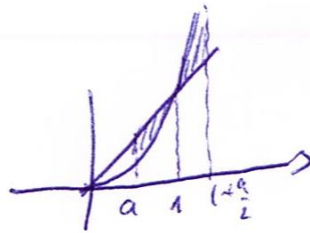


$$\frac{2.73}{4} \quad S = \int_a^1 (x-x^2) dx + \int_1^{1+\frac{a}{2}} (x^2-x) dx =$$



$$S = \left. \frac{x^2}{2} - \frac{x^3}{3} \right|_a^1 + \left. \frac{x^3}{3} - \frac{x^2}{2} \right|_1^{1+\frac{a}{2}} = \frac{1}{2} - \frac{1}{3} + \frac{a^2}{2} - \frac{a^3}{3} + \frac{(1+\frac{a}{2})^3}{3} - \frac{(1+\frac{a}{2})^2}{2} - \frac{1}{3} + \frac{1}{2} =$$

$$\frac{1}{5} = \frac{a^2}{6} + \frac{1}{6} \left(1 + \frac{a}{2}\right)^2 \left[2\left(1 + \frac{a}{2}\right) - 3\right] = \frac{1}{5} = \frac{a^2}{6} + \frac{1}{6} \left(1 + a + \frac{a^2}{4}\right) (a-1) =$$

$$\frac{1}{5} = \frac{a^2}{6} + \frac{a}{6} - \frac{1}{6} + \frac{1}{6} a^2 - \frac{1}{6} a + \frac{a^3}{24} - \frac{a^2}{24} = \frac{1}{6} + \frac{a^2}{24} + \frac{a^3}{24}$$

$$S' = -\frac{2a}{24} + \frac{3a^2}{24} = \frac{-a}{24} (2-3a)$$

$$\downarrow$$

$$\boxed{a = \frac{2}{3}}$$

$\frac{1}{5}$	$\frac{2}{3}$	$\frac{1}{5}$
-	0	+
\downarrow	min	\nearrow