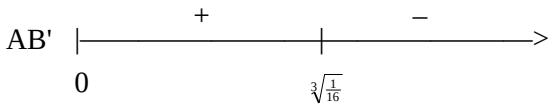
Twee halve parabolen

17. $AB = g(p) - f(p) = \sqrt{p} - p^2$

$[AB]' = \dfrac{1}{2\sqrt{p}} - 2p = 0 \quad \rightarrow \quad p\sqrt{p} = {}^1\!/_4$

dus $p = \left(\frac{1}{4}\right)^{\frac{2}{3}} = \sqrt[3]{\left(\frac{1}{4}\right)^2} = \sqrt[3]{\frac{1}{16}}$



Voor $p = \sqrt[3]{\frac{1}{16}}$ is AB dus maximaal

18. $A = \int_1^2 (f(x) - g(x))dx + \int_2^4 (6 - x - \sqrt{x})\,dx =$

$= \left[\frac{1}{3}x^3 - \frac{2}{3}.x^{\frac{3}{2}}\right]_1^2 + \left[6x - \frac{1}{2}x^2 - \frac{2}{3}.x^{\frac{3}{2}}\right]_2^4 =$

$\frac{8}{3} - \frac{4}{3}\sqrt{2} - \frac{1}{3} + \frac{2}{3} + 24 - 8 - \frac{16}{3} - 12 + 2 + \frac{4}{3}\sqrt{2} = 3\frac{2}{3}$