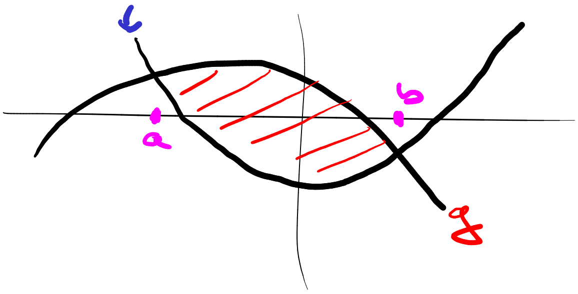
• $f = x^2 + x - 3$ $\quad g(x) = -x^2 - 2x + 2$



f g

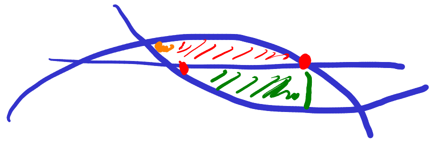
$$\int_a^b g - f$$

průsečíky

$$x^2 + x - 3 = -x^2 - 2x + 2$$

$$2x^2 + 3x - 5 = 0$$

$$x_1 = 1 \qquad x_2 = -5/2$$



$$\int_{-5/2}^{1} -x^2 - 2x + 2 - (x^2 + x - 3)\, dx = \int_{-2,5}^{1} -2x^2 - 3x + 5\, dx$$

$$= \left[-\frac{2}{3}x^3 - \frac{3}{2}x^2 + 5x \right]_{-5/2}^{1} = -\frac{2}{3} - \frac{3}{2} + 5 - \left(\frac{250}{54} - \frac{75}{8} - \frac{25}{2} \right)$$

$$= \frac{343}{24}$$

$$\sum_{n=1}^{\infty} \frac{1}{n^2} = \frac{\pi^2}{6}$$

$f(x) = \frac{1}{x^2} \geq 0$ spoj. na $[1, \infty)$ nerost ✓

$$\int_1^{\infty} \frac{1}{x^2}\, dx = \left[\frac{-1}{x} \right]_1^{\infty} = 0 - (-1) = 1$$

konv.

$\sum k \iff \int k$

Závěr $\sum \frac{1}{n^2}$ k