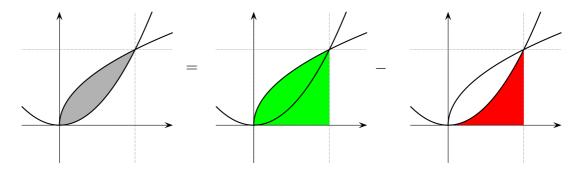
11.6



Déterminons les abscisses des points d'intersection des graphes de f et de g:

$$x^2 = \sqrt{x}$$

$$x^4 = x$$

$$0 = x^4 - x = x(x^3 - 1) = x(x - 1)(x^2 + x + 1)$$

$$x = 0$$
 ou  $x = 1$ 

$$\int_0^1 \sqrt{x} \, dx - \int_0^1 x^2 \, dx = \int_0^1 \left( \sqrt{x} - x^2 \right) \, dx = \int_0^1 \left( x^{\frac{1}{2}} - x^2 \right) \, dx = \frac{1}{\frac{3}{2}} \, x^{\frac{3}{2}} - \frac{1}{3} \, x^3 \, \bigg|_0^1 = \frac{1}{\frac{3}{2}} \, x^{\frac{3}{2}} - \frac{1}{3} \, x^3 \, dx = \frac{1}{\frac{3}{2}} \, x^{\frac{3}{2}} - \frac{1}{3} \, x^3 \, dx = \frac{1}{\frac{3}{2}} \, x^{\frac{3}{2}} - \frac{1}{3} \, x^3 \, dx = \frac{1}{\frac{3}{2}} \, x^{\frac{3}{2}} - \frac{1}{3} \, x^3 \, dx = \frac{1}{\frac{3}{2}} \, x^{\frac{3}{2}} - \frac{1}{3} \, x^3 \, dx = \frac{1}{\frac{3}{2}} \, x^{\frac{3}{2}} - \frac{1}{3} \, x^3 \, dx = \frac{1}{\frac{3}{2}} \, x^{\frac{3}{2}} - \frac{1}{3} \, x^3 \, dx = \frac{1}{\frac{3}{2}} \, x^3 \, dx = \frac{1}{\frac{3}} \, x^3 \, dx = \frac{1}{\frac{3}{2}} \, x^3 \, dx = \frac{1}{\frac{3}} \, x^3 \, dx = \frac{1$$

$$\frac{2}{3}x\sqrt{x} - \frac{1}{3}x^3 \bigg|_0^1 = \left(\frac{2}{3}\cdot 1\cdot\sqrt{1} - \frac{1}{3}\cdot 1^3\right) - \left(\frac{2}{3}\cdot 0\cdot\sqrt{0} - \frac{1}{3}\cdot 0^3\right) = \left(\frac{2}{3} - \frac{1}{3}\right) - (0 - 0) = \frac{2}{3}x^3 + \frac{1}{3}x^3 + \frac{1$$

$$\frac{1}{3} - 0 = \frac{1}{3}$$

Analyse : intégrales Corrigé 11.6