Date le seguenti funzioni reali $f$ e $g$, definite nell'insieme che abbiamo denominato *dominio naturale*, calcolare

$$(f \circ g)(x) + (g \circ f)(x)$$

| | Risposte: |
|---|---|
| $f(x) = \log(x + \text{sen}x)\,, \quad g(x) = \frac{1}{x}$ | $\log\left(\frac{1}{x} + \text{sen}\left(\frac{1}{x}\right)\right) + \frac{1}{\log(x+\text{sen}x)}$ |
| $f(x) = x - \cos x\,, \quad g(x) = e^x$ | $e^x - \cos(e^x) + e^{x-\cos x}$ |
| $f(x) = x - \log(1-x)\,, \quad g(x) = \cos x$ | $\cos x + \cos(x - \log(1-x)) - \log(1-\cos x)$ |
| $f(x) = \text{tg}(2x+1)\,, \quad g(x) = e^{x+1}$ | $\text{tg}\left(2e^{x+1}+1\right) + e^{\text{tg}(2x+1)+1}$ |
| $f(x) = \cos(5x)\,, \quad g(x) = \log^2 x$ | $\log^2(\cos(5x)) + \cos\left(5\log^2 x\right)$ |
| $f(x) = \text{sen}\left(\frac{1}{x}\right)\,, \quad g(x) = \frac{1}{x+1}$ | $\text{sen}(x+1) + \frac{1}{\text{sen}\left(\frac{1}{x}\right)+1}$ |
| $f(x) = \log(1 + \text{sen}x)\,, \quad g(x) = \log x$ | $\log(\log(1+\text{sen}x)) + \log(1+\text{sen}(\log x))$ |
| $f(x) = \frac{1}{1+\text{sen}x}\,, \quad g(x) = \log x$ | $\log\left(\frac{1}{1+\text{sen}x}\right) + \frac{1}{1+\text{sen}(\log x)}$ |
| $f(x) = 2x^2 + x\,, \quad g(x) = e^{x+1}$ | $e^{x+1}\left(e^{2x^2} + 2e^{x+1} + 1\right)$ |
| $f(x) = x + \text{sen}x\,, \quad g(x) = \log(x+2)$ | $\log(x+2) + \log(x+\text{sen}x+2) + \text{sen}(\log(x+2))$ |
| $f(x) = x + 3\,, \quad g(x) = \log(x+1)$ | $\log(x+1) + \log(x+4) + 3$ |
| $f(x) = 3x + \cos x\,, \quad g(x) = \log(x+1)$ | $3\log(x+1) + \cos(\log(x+1)) + \log(3x+\cos x+1)$ |
| $f(x) = 4e^x + 2\,, \quad g(x) = \cos(x+1)$ | $\cos\left(4e^x+3\right) + 4e^{\cos(x+1)} + 2$ |
| $f(x) = 2x + 4\log x\,, \quad g(x) = x+1$ | $4x + 4\log x + 4\log(x+1) + 3$ |
| $f(x) = x + \text{sen}(x+1)\,, \quad g(x) = x^2$ | $2x^2 + \text{sen}\left(x^2+1\right) + \text{sen}^2(x+1) + 2x\text{sen}(x+1)$ |
| $f(x) = x^2 + \text{tg}(x+1)\,, \quad g(x) = x+1$ | $2\left(x^2+x+1\right) + \text{tg}(x+1) + \text{tg}(x+2)$ |
| $f(x) = \cos\left(\frac{1}{\log x}\right)\,, \quad g(x) = x+5$ | $\cos\left(\frac{1}{\log x}\right) + \cos\left(\frac{1}{\log(x+5)}\right) + 5$ |
| $f(x) = \text{sen}\left(x^2+x+1\right)\,, \quad g(x) = x+1$ | $\text{sen}\left(x^2+x+1\right) + \text{sen}\left(x^2+3x+3\right) + 1$ |
| $f(x) = (1+\log x)^2\,, \quad g(x) = \cos x$ | $(1+\log(\cos x))^2 + \cos\left((1+\log x)^2\right)$ |