

Si studino le seguenti funzioni:

$$1) f(x) = \frac{x^3}{x^2 - 1}$$

$$2) f(x) = \frac{x^3 + 3x^2 + 1}{x^2}$$

$$3) f(x) = \log\left(\frac{e^{2x} + 1}{e^x - 1}\right)$$

$$4) f(x) = x^{-2}e^{-\frac{3}{\sqrt[3]{x}}}$$

$$5) f(x) = \frac{x^3 + 3x^2 - 3}{|x^2 - 1|}$$

$$6) f(x) = x + 3 \arctan \frac{x+1}{x-1}$$

$$7) f(x) = -x + 2 \arctan \frac{x-1}{x+1}$$

$$8) f(x) = |x| \left(1 - \frac{1}{\log|x|}\right)$$

$$9) f(x) = \frac{x(2 \log|x| + 1)}{\log|x|}$$

$$10) f(x) = x \sqrt{\frac{x-2}{x+1}}$$

$$11) f(x) = (x+1) \sqrt{\frac{x-1}{x}}$$

$$12) f(x) = \frac{x^3}{\log x}$$

$$13) f(x) = \frac{x^4}{\log x}$$

$$14) f(x) = \sqrt[3]{x(x-1)^2}$$

$$15) f(x) = \frac{x^2}{2x^3 + 1}$$

$$16) f(x) = \sqrt[3]{x^2 + x - 6}$$

$$17) f(x) = \log |(x^2 - 3)x|$$

$$18) f(x) = \log \left| \frac{x^2 - 2}{x^2 - 1} \right|$$

$$19) f(x) = 4x + \sin 2x - 4\sqrt{2} \sin x$$

$$20) f(x) = 3x - \sin x \cos x - 2 \cos x$$

$$21) f(x) = \frac{x(2 \log |x| + 1)}{\log |x|}$$

$$22) f(x) = |x| \left(1 - \frac{1}{\log |x|} \right)$$

$$23) f(x) = e^{4|x| - x^2 - 2x}$$

$$24) f(x) = \arcsin \frac{1}{1+x}$$

$$25) f(x) = \frac{e^{2x} - 2}{e^{3x}}$$

$$26) f(x) = \frac{e^{2x}}{e^x - 2}$$

$$27) f(x) = \sqrt[3]{x^2 + 3x - 4}$$