

Compiti estivi classe IV sez A

Si determini, delle funzioni sotto riportate:

Dominio, eventuali simmetrie, intersezioni con gli assi, studio del segno.

45 a)  $y = \frac{x^2 - 5x + 4}{x - 5}$ . b)  $y = \frac{2x^3 - 3x^2 + 1}{2x^2}$ .

46 a)  $y = \frac{2x^2 - x - 2}{(x - 1)^2}$ . b)  $y = \frac{x^3}{(x^2 - 1)^2}$ .

47 a)  $y = \frac{x}{(x - 1)^3}$ . b)  $y = \frac{1}{x^4 - 3x^2 - 4}$ .

48 a)  $y = \frac{1 - x^2}{1 + x^2}$ . b)  $y = \frac{x^2}{x^2 + 4x + 4}$ .

76 a)  $y = (x - 2)e^{-2x}$ . b)  $y = \frac{e^{x+1}}{x + 2}$ .

77 a)  $y = (x^2 + x)e^x$ . b)  $y = \frac{e^{2x}}{e^x + 1}$ .

78 a)  $y = e^{\frac{1}{x-2}}$ . b)  $y = \frac{e^x}{1 + e^{2x}}$ .

79 a)  $y = e^{\frac{x}{x-1}}$ . b)  $y = \frac{x+1}{x+5} e^x$ .

80 a)  $y = \frac{e^x}{2 - x}$ . b)  $y = \frac{x^2 + 2x}{e^x}$ .

93 a)  $y = \frac{\log x + 1}{\log x - 2}$ . b)  $y = \frac{\log x}{1 - \log^2 x}$ .

94 a)  $y = \log(9 - x^2)$ . b)  $y = \frac{x \log x}{(1 + \log x)^2}$ .

95 a)  $y = \frac{x}{1 + \log x}$ . b)  $y = \log \frac{x^2 + 2x}{x^2 - 1}$ .

96 a)  $y = x \log x$ . b)  $y = \frac{x^2}{\log x}$ .

7 a)  $y = \arctg e^x$ . b)  $y = x^2 - 3\sqrt[3]{x^2}$ .

8 a)  $y = \frac{x^2 - 2x - 1}{x^2 + 1}$ . b)  $y = \frac{\sin x + \cos x}{\sin 2x}$ .

9 a)  $y = \sqrt{\frac{x+1}{4-x^2}}$ . b)  $y = x\sqrt[3]{\log x}$ .

10 a)  $y = \frac{1 - \sin x}{\cos x}$ . b)  $y = |x| - e^x$ .

11 a)  $y = \log \frac{x^2}{x-1}$ . b)  $y = (x-1)^2 e^{-x}$ .

12 a)  $y = x \log|x|$ . b)  $y = \arctg \frac{1-x}{1+x}$ .

13 a)  $y = \sqrt{x} \log x$ . b)  $y = x e^{\frac{1}{x}}$ .

61  $y = \frac{x^2 - 6x - 18}{\sqrt{2x-3}}$ .

62  $y = \frac{x+2}{\sqrt{x^2-x}}$ .

64 a)  $y = \sqrt[3]{x^2-x}$ . b)  $y = \frac{\sqrt{x+1}}{\sqrt{x-1}}$ .

65 a)  $y = \sqrt{x-x^2}$ . b)  $y = x\sqrt{1-x^2}$ .

66 a)  $y = \frac{x}{\sqrt{1-x^2}}$ . b)  $y = \frac{2x^2 + 11x}{\sqrt{2x+1}}$ .

107 a)  $y = \frac{1 - \sin x}{\cos x}$ . b)  $y = 2 \sin^3 x - 3 \sin x$ .

108 a)  $y = 2 \sin x - \operatorname{tg} x$ . b)  $y = \frac{1 + \sin x}{\sin x + \cos x}$ .

109 a)  $y = \sin x \cos x + \cos^2 x$ . b)  $y = \frac{\sin x}{\cos x + \sqrt{2}}$ .

110 a)  $y = \frac{\sin x}{1 + \sin x}$ . b)  $y = \frac{1 - \cos x}{1 - \sin x}$ .

111 a)  $y = \frac{\cos x - \sin x}{\cos^2 x}$ . b)  $y = \frac{\sin x}{\cos^2 x - 2}$ .

112 a)  $y = \frac{1 - \sin x}{2 + \sin x}$ . b)  $y = \frac{\sin 2x}{1 + 4 \sin x}$ .

16 a)  $y = \sqrt{x} \cdot e^{-2x}$ . b)  $y = \sqrt{x} e^{-\frac{1}{x}}$ .

17 a)  $y = \frac{1}{x} + \log x$ . b)  $y = \log \frac{x^3}{x^2 - 1}$ .

18 a)  $y = \frac{\sin x}{1 + 2 \sin^2 x}$ . b)  $y = \log\left(1 - \frac{1}{|x|}\right)$ .

19 a)  $y = x^2(x-1)^3$ . b)  $y = \frac{x^3}{1+x^2}$ .

20 a)  $y = \frac{x^3}{(x+1)^4}$ . b)  $y = \sin x \cos x + \cos^2 x$ .

21 a)  $y = \sqrt{x} e^{-x^2}$ . b)  $y = \frac{1 + \log|x|}{2 - \log|x|}$ .

22 a)  $y = \sqrt[3]{x} e^{-\frac{1}{x}}$ . b)  $y = x^2 - 4x + \log x$ .