

UNIVERSITA' DEGLI STUDI DI ROMA TOR VERGATA

ESERCITAZIONE CORSO DI ANALISI MATEMATICA I

CORSO DI LAUREA IN INGEGNERIA

ESERCITATORE: DANIELE PASQUAZI

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1. Tracciare il grafico delle seguenti funzioni specificando: dominio, eventuali asintoti, punti di massimo/minimo relativo, intervalli di crescenza/decrescenza, concavità e convessità (quando possibile). Studiare il comportamento della funzione negli eventuali punti di non derivabilità.

1.a

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

1.e

$$f(x) = xe^{x/1+x}$$

1.b

$$f(x) = \sqrt{x^2 + x} - x$$

1.f

$$f(x) = \arcsin\left(\frac{x+1}{x-1}\right)$$

1.c

$$f(x) = \log(1+x) - \arctan(x)$$

1.g

$$f(x) = x - \log(x^2 + x + 1)$$

1.d

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

1.h

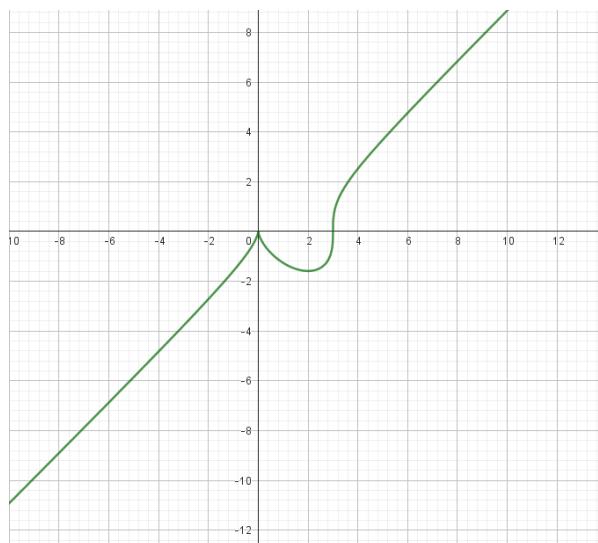
$$f(x) = \arctan(1-x^2) + \arctan\left(\frac{1}{|1-x^2|}\right)$$

1.i

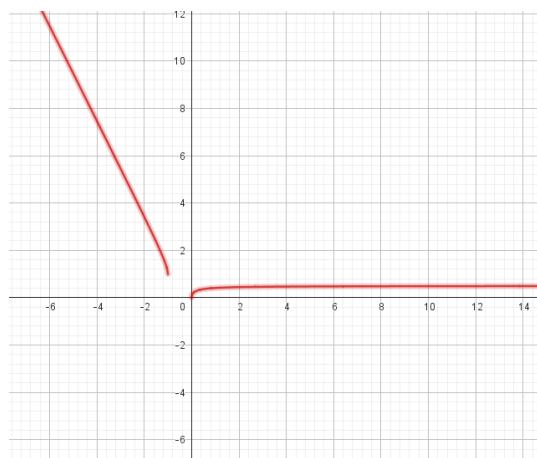
$$f(x) = xe^{\frac{|x-5|}{x-6}}$$

Soluzioni

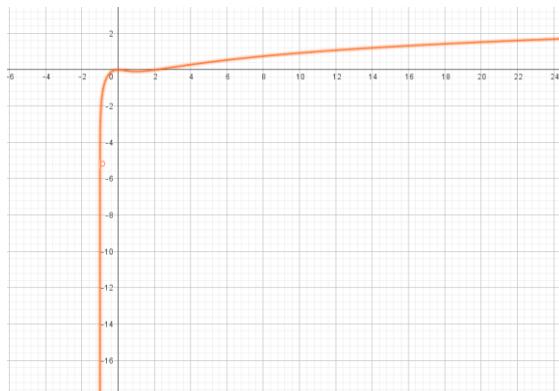
1.a



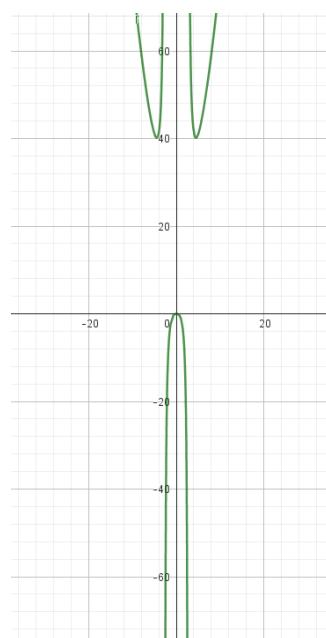
1.b

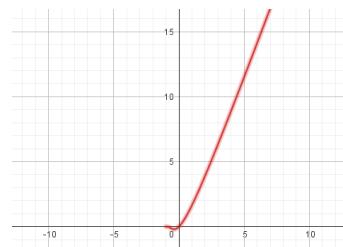


1.c

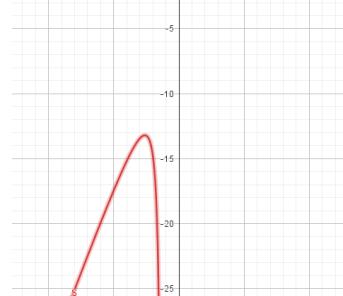


1.d

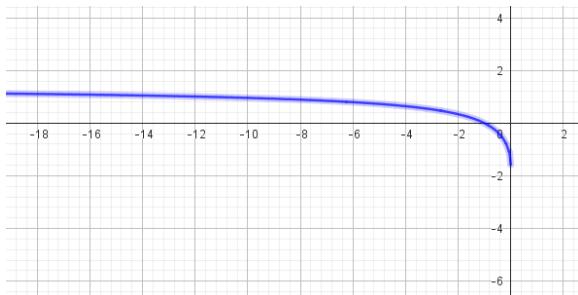




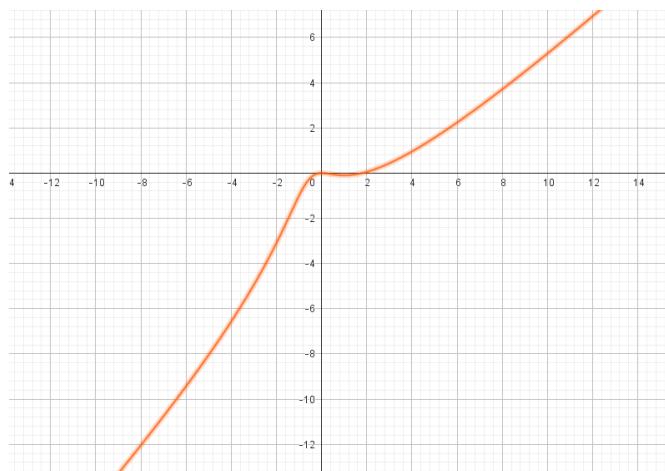
1.e



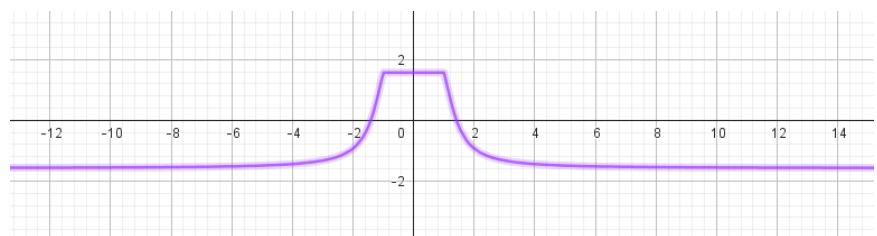
1.f



1.g



1.h



1.i

