Linköpings universitet
Matematiska institutionen
Malgorzata Wesolowska

Utbildningskod: 764G07
Modul: KTR1

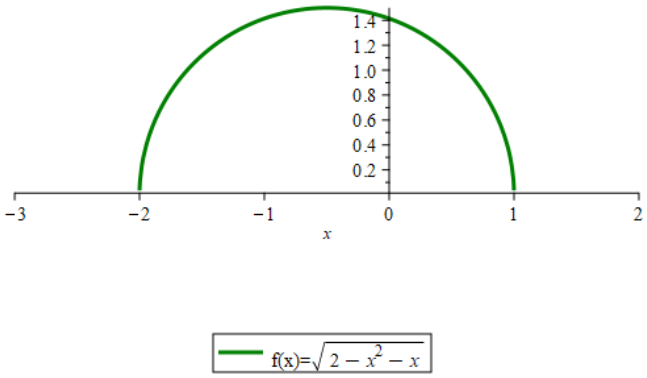
# Matematisk analys del1
## Dugga 1
## Facit

1.

a) $x = -\frac{2}{3}$

b) $x = 1$

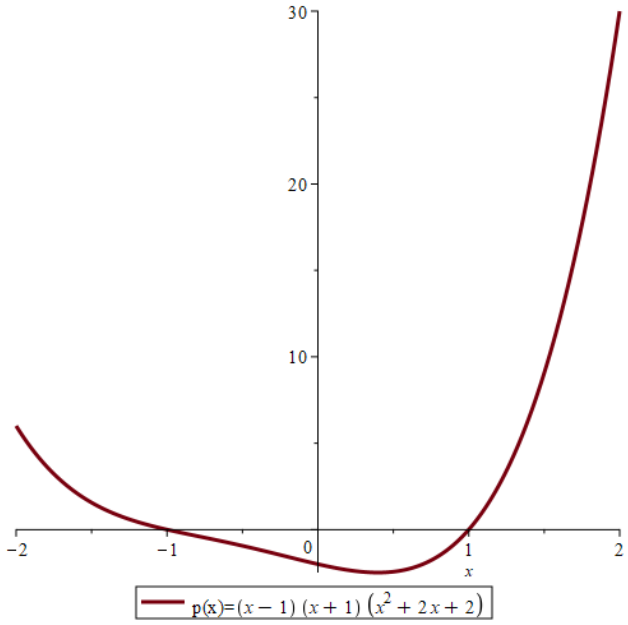
c) $D_f = [-2, 1]$ , $V_f = \left[0, \frac{3}{2}\right]$




2.

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

b) $x \in [-1, 1]$



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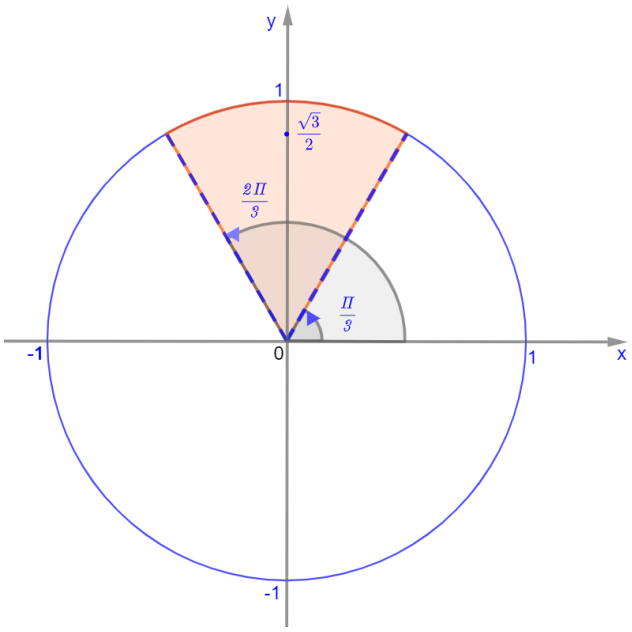
3.

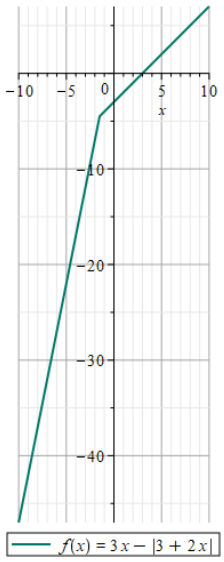
a) $x = \frac{\pi}{2} + \pi n,\ n \in \mathbb{Z} \quad eller \quad x = \pm\frac{\pi}{3} + \pi k\,,\ k \in \mathbb{Z}$

b) $\frac{\pi}{3} < x < \frac{2\pi}{3}$




4.

a) $f(x) = 3x - |3 + 2x| = \begin{cases} x - 3\,, & x \geq \frac{-3}{2} \\ 5x + 3, & x < \frac{-3}{2} \end{cases}$




b) $\arg(z) = \frac{5\pi}{12},\ |z| = 2\sqrt{2}$