

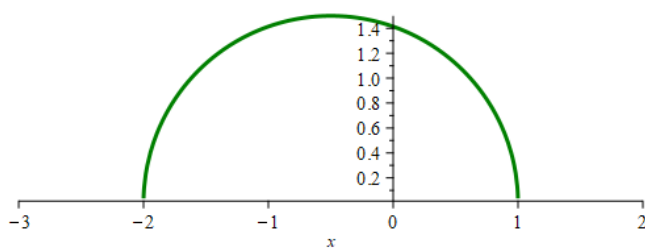
Matematisk analys del1
Dugga 1
Facit

1.

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

b) $x = 1$

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

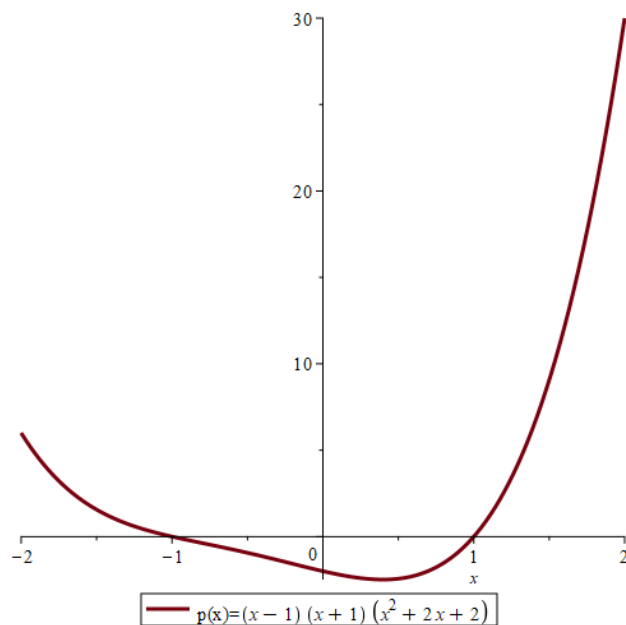


$f(x) = \sqrt{2 - x^2 - x}$

2.

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

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

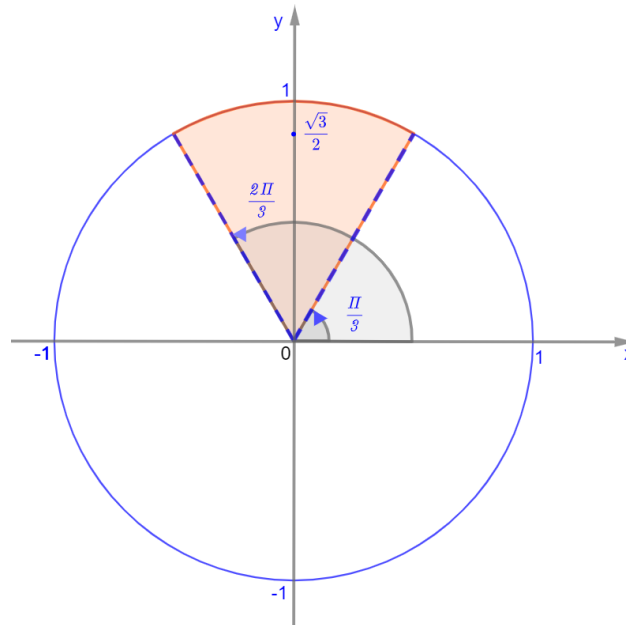


$p(x) = (x - 1)(x + 1)(x^2 + 2x + 2)$

3.

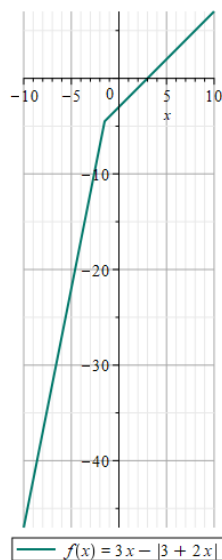
a) $x = \frac{\pi}{2} + \pi n, n \in \mathbb{Z}$ eller $x = \pm \frac{\pi}{3} + 2\pi k, k \in \mathbb{Z}$

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

