MATEMATIKA 1
REŠITVE 1. DOMAČE NALOGE

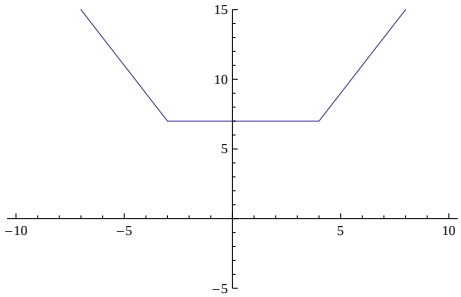
1. Dokazujemo s popolno indukcijo.

2. (a) $x_1 = -3$, $x_2 = -4$;
   (b) $x_1 = -10$, $x_2 = 2$.

3. (a) $x \in (-\infty, -2] \cup [7, \infty)$,
   (b) $x \in (-1, 5/2)$.

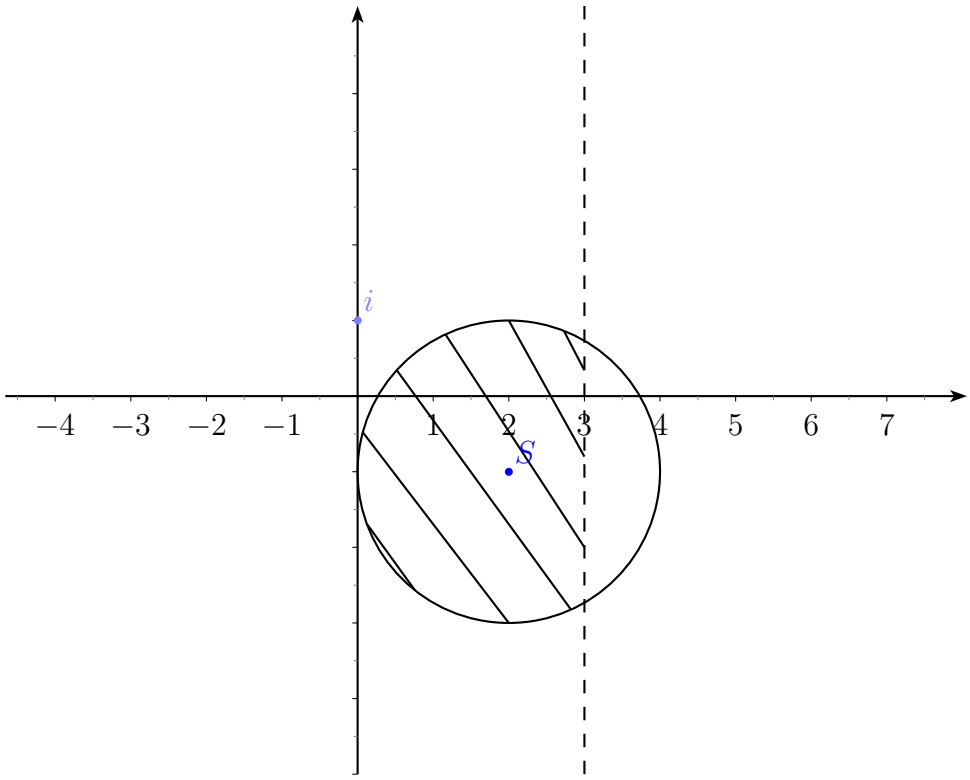
4. (a) $x \in (-1, 3)$,
   (b) $x \in (-\infty, 4)$,
   (c) $x = 2$.

5. Graf:



Slika 1:

6. Rešitev je podana na spodnji sliki, pri čemer vrednosti na mejni daljici *niso* vključene.



7. (a) $\{z = a \pm i\sqrt{2a - a^2}; a \in \mathbb{R}\}$,

   (b) $z_1 = 0$, $z_2 = 1$, $z_3 = -\frac{1}{2} - i\frac{\sqrt{3}}{2}$, $z_4 = -\frac{1}{2} + i\frac{\sqrt{3}}{2}$.

8. $(-2 + i\sqrt{2})^{2009} = (\sqrt{6})^{2009}(-0.28 - i0.96)$.

9. $z_0 = \sqrt[4]{2}\left(\frac{\sqrt{3}}{2} + i\frac{1}{2}\right)$, $z_1 = \sqrt[4]{2}\left(-\frac{1}{2} + i\frac{\sqrt{3}}{2}\right)$, $z_2 = \sqrt[4]{2}\left(-\frac{\sqrt{3}}{2} - i\frac{1}{2}\right)$, $z_3 = \sqrt[4]{2}\left(\frac{1}{2} - i\frac{\sqrt{3}}{2}\right)$.

10. (a) $\inf A = 0$, $\sup A = 1/2$;

    (b) $\inf A = 1$, $\sup A = 3$.