

Zadatak 4. Računajući po definiciji pokaži da je limes niza (x_n) , $x_n = \frac{3-2n}{n+1}$ jednak -2 .

Rješenje. Promotrimo razliku $|x_n - (-2)|$:

$$\left| \frac{3-2n}{n+1} + 2 \right| = \left| \frac{3-2n+2n+2}{n+1} \right| = \frac{5}{n+1} < \varepsilon$$

$$\implies n+1 > \frac{5}{\varepsilon} \implies n > \frac{5}{\varepsilon} - 1 = n_0$$

$$\implies (\forall \varepsilon > 0)(\exists n_0 = \left[\frac{5}{\varepsilon} - 1 \right] \in \mathbf{N})(\forall n \in \mathbf{N}) n > n_0$$

$$\implies \left| \frac{3-2n}{n+1} + 2 \right| < \varepsilon.$$