

a) Primjenom proširenog Euklidovog algoritma dobijamo:

$$\begin{aligned}210 &= 1 \cdot 155 + 55 \Rightarrow 55 = 210 - 155 \\155 &= 2 \cdot 55 + 45 \Rightarrow 45 = 155 - 2 \cdot 55 = 155 - 2 \cdot (210 - 155) = 3 \cdot 155 - 2 \cdot 210 \\55 &= 1 \cdot 45 + 10 \Rightarrow 10 = 55 - 45 = (210 - 155) - (3 \cdot 155 - 2 \cdot 210) = 3 \cdot 210 - 4 \cdot 155 \\45 &= 4 \cdot 10 + 5 \Rightarrow 5 = 45 - 4 \cdot 10 = (3 \cdot 155 - 2 \cdot 210) - 4 \cdot (3 \cdot 210 - 4 \cdot 155) = \\&= 19 \cdot 155 - 14 \cdot 210 \\10 &= 2 \cdot \underline{5} + 0\end{aligned}$$

Dakle, imamo:

$$\text{NZD}(210, 155) = 5 = -14 \cdot 210 + 19 \cdot 155.$$

Ovo je samo jedan od mogućih prikaza. Sve druge prikaze tog oblika možemo izraziti kao:

$$\begin{aligned}\text{NZD}(210, 155) = 5 &= (-14 + 155k/5) \cdot 210 + (19 - 210k/5) \cdot 155 = \\&= (-14 + 31k) \cdot 210 + (19 - 42k) \cdot 155, \quad k \in \mathbb{Z}\end{aligned}$$

b) Primjenom proširenog Euklidovog algoritma dobijamo:

$$\begin{aligned}459 &= 4 \cdot 99 + 63 \Rightarrow 63 = 459 - 4 \cdot 99 \\99 &= 1 \cdot 63 + 36 \Rightarrow 36 = 99 - 63 = 99 - (459 - 4 \cdot 99) = 5 \cdot 99 - 459 \\63 &= 1 \cdot 36 + 27 \Rightarrow 27 = 63 - 36 = (459 - 4 \cdot 99) - (5 \cdot 99 - 459) = 2 \cdot 459 - 9 \cdot 99 \\36 &= 1 \cdot 27 + 9 \Rightarrow 9 = 36 - 27 = (5 \cdot 99 - 459) - (2 \cdot 459 - 9 \cdot 99) = 14 \cdot 99 - 3 \cdot 459 \\27 &= 3 \cdot \underline{9} + 0\end{aligned}$$

Dakle, imamo:

$$\text{NZD}(99, 459) = 9 = 14 \cdot 99 - 3 \cdot 459$$

Ovo je samo jedan od mogućih prikaza. Sve druge prikaze tog oblika možemo izraziti kao:

$$\begin{aligned}\text{NZD}(99, 459) = 9 &= (14 + 459k/9) \cdot 99 - (3 + 99k/9) \cdot 459 = \\&= (14 + 51k) \cdot 99 - (3 + 11k) \cdot 459, \quad k \in \mathbb{Z}\end{aligned}$$

c) Primjenom proširenog Euklidovog algoritma dobijamo:

$$\begin{aligned}311 &= 1 \cdot 173 + 138 \Rightarrow 138 = 311 - 173 \\173 &= 1 \cdot 138 + 35 \Rightarrow 35 = 173 - 138 = 173 - (311 - 173) = 2 \cdot 173 - 311 \\138 &= 3 \cdot 35 + 33 \Rightarrow 33 = 138 - 3 \cdot 35 = (311 - 173) - 3 \cdot (2 \cdot 173 - 311) = 4 \cdot 311 - 7 \cdot 173 \\35 &= 1 \cdot 33 + 2 \Rightarrow 2 = 35 - 33 = (2 \cdot 173 - 311) - (4 \cdot 311 - 7 \cdot 173) = 9 \cdot 173 - 5 \cdot 311 \\33 &= 16 \cdot 2 + 1 \Rightarrow 1 = 33 - 16 \cdot 2 = (4 \cdot 311 - 7 \cdot 173) - 16 \cdot (9 \cdot 173 - 5 \cdot 311) = \\&= 84 \cdot 311 - 151 \cdot 173 \\2 &= 2 \cdot \underline{1} + 0\end{aligned}$$

Dakle, imamo:

$$\text{NZD}(173, 311) = 1 = -151 \cdot 173 + 84 \cdot 311$$

Ovo je samo jedan od mogućih prikaza. Sve druge prikaze tog oblika možemo izraziti kao:

$$\text{NZD}(173, 311) = 1 = (-151 + 311k) \cdot 173 + (84 - 173k) \cdot 311, \quad k \in \mathbb{Z}$$