Rješenja zadataka 3.3

Zadatak 1. Odredi inverzne funkcije ovih linearnih funkcija:

1) $f(x) = x - 2$;
2) $f(x) = 2x + 3$;
3) $f(x) = -3x + 1$;
4) $f(x) = \frac{1}{2}x - \frac{3}{2}$;
5) $f(x) = -\frac{1}{2}x - 12$;
6) $f(x) = -\frac{3}{4}x + \frac{5}{3}$.

Rješenje.

1) $f(x) = x - 2$

$$x = y - 2 \implies y = x + 2 \implies f^{-1}(x) = x + 2$$

2) $f(x) = 2x + 3$

$$x = 2y + 3 \implies 2y = x - 3 \implies f^{-1}(x) = \frac{1}{2}x - \frac{3}{2}$$

3) $f(x) = -3x + 1$

$$x = -3y + 1 \implies 3y = -x + 1 \implies f^{-1}(x) = -\frac{1}{3}x + \frac{1}{3}$$

4) $f(x) = \frac{1}{2}x - \frac{3}{2}$

$$x = \frac{1}{2}y - \frac{3}{2} \implies 2x = y - 3 \implies f^{-1}(x) = 2x + 3$$

5) $f(x) = -\frac{1}{2}x - 12$

$$x = -\frac{1}{2}y - 12 \implies 2x = -y - 24 \implies f^{-1}(x) = -2x - 24$$

6) $f(x) = -\frac{3}{4}x + \frac{5}{3}$

$$x = -\frac{3}{4}y + \frac{5}{3} \implies 12x = -9y + 20 \implies f^{-1}(x) = -\frac{4}{3}x + \frac{20}{9}$$