09 May 2021 22:50

a)
$$X(z) = \frac{3z^2 - 19z + 81}{16z - 3z + 1} \qquad x_0 = ?$$

po definiciji:

$$X(z) = \sum_n x_n z^n = x_0 + x_1 \cdot z + x_2 \cdot z^2 + \dots$$

za $z = 0$:

$$X(0) = x_0 + \cancel{x_1 z} + \cancel{x_2 \cdot z^2} + \dots = x_0$$

$$X(0) = \frac{81}{1} \Rightarrow \boxed{x_0 = 81}$$

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(3)
$$G(z) = \frac{9z + a}{9z^2 - 6z + 9} \qquad a = ? \qquad E(S) = ?$$

- U proizvoljnom slučaju vrijedi:

$$G(1) = 1$$

DOKAZ (iz skripte):

$$G(z) = \sum_n P(S = n) z^n$$

$$G(1) = \sum_n P(S = n) 1^n = \sum_n P(S = n) = 1 .$$

$$G(1) = \frac{9 + a}{9 - 6 + 9} = \frac{9 + a}{12} = 1$$

$$\frac{9}{12} + \frac{a}{12} = 1$$

$$\frac{a}{12} = 1 - \frac{3}{4} = \frac{1}{4}$$

$$\boxed{a = \frac{12}{4} = 3}$$

$E(S) =$ nadteno.