

Assignment-1

EE:1205 Signals and Systems
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I. QUESTION:

Ramkali saved Rs 5 in the first week of a year and then increased her weekly savings by Rs 1.75. If in the n th week, her weekly savings become Rs 20.75, find n .

II. SOLUTION:

Given that,

$$a = 5$$

$$d = 1.75$$

$$a_n = 20$$

$$n = ?$$

$$a_n = a + (n - 1)d \quad (1)$$

$$20.75 = 5 + (n - 1)(1.75) \quad (2)$$

$$20.75 - 5 = (n - 1)(1.75) \quad (3)$$

$$15.75 = (n - 1)(1.75) \quad (4)$$

$$n - 1 = \frac{15.75}{1.75} = \frac{1575}{175} \quad (5)$$

$$n - 1 = \frac{63}{7} = 9 \quad (6)$$

$$n = 9 + 1 \quad (7)$$

$$n = 10 \quad (8)$$

Hence, n is 10.