

NCERT/CBSE MATHEMATICS CLASS 10 textbook(OPTIONAL EXERCISE)

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Answers to NCERT/CBSE MATHEMATICS Class 10 (Class XI) textbook OPTIONAL EXERCISE

CHAPTER FIVE

ARITHMETIC PROGRESSION

EXERCISES

1. Which term of the AP : 121, 117, 113, . . . , is its first negative term?

Solution:

AP is 121, 117, 113, .

We know that the n^{th} term of an Arithmetic Progression, whose

First term = a

and Common Difference = d

is given by

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

Here, First term = 121

and Common Difference = -4

is given by

$$a_n = [121 + (n - 1)(-4)] < 0$$

$$\Rightarrow [121 - 4n + 4] < 0$$

$$\Rightarrow [125 - 4n] < 0$$

$$\Rightarrow 125 < 4n$$

$$\Rightarrow \frac{125}{4} < n$$

$$\Rightarrow 31.25 < n$$

$$\Rightarrow n > 31.25$$

$$\Rightarrow n = 32$$

$\Rightarrow a_{32}$ is the first negative term.

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