

CLASS 10 MATHEMATICS

CH-5 ARITHMETIC PROGRESSION (AP)

EX-5.1

Q2. Write first four terms of the A.P. when the first term a and the common difference are given as follows:

(i) $a = 10, d = 10$

ANSWER:

$a = 10, d = 10$

Let us consider, the Arithmetic Progression series be $a_1, a_2, a_3, a_4, a_5 \dots$

$a_1 = a = 10$

$a_2 = a_1 + d = 10 + 10 = 20$

$a_3 = a_2 + d = 20 + 10 = 30$

$a_4 = a_3 + d = 30 + 10 = 40$

$a_5 = a_4 + d = 40 + 10 = 50$

THUS,

Therefore, the A.P. series will be 10, 20, 30, 40, 50 ...

And First four terms of this A.P. will be 10, 20, 30, and 40.

(ii) $a = -2, d = 0$

ANSWER:

Let the AP be $a_1, a_2, a_3, a_4, a_5 \dots$

$$a_1 = a = -2$$

$$a_2 = a_1 + d = -2 + 0 = -2$$

$$a_3 = a_2 + d = -2 + 0 = -2$$

$$a_4 = a_3 + d = -2 + 0 = -2$$

Therefore, the A.P. series will be $-2, -2, -2, -2 \dots$

THUS,

First four terms of this A.P. will be $-2, -2, -2$ and -2 .

(iii) $a = 4, d = -3$

ANSWER:

Let the AP be $a_1, a_2, a_3, a_4, a_5 \dots$

$$a_1 = a = 4$$

$$a_2 = a_1 + d = 4 - 3 = 1$$

$$a_3 = a_2 + d = 1 - 3 = -2$$

$$a_4 = a_3 + d = -2 - 3 = -5$$

Therefore, the A.P. series will be $4, 1, -2, -5 \dots$

THUS,

first four terms of this A.P. will be $4, 1, -2$ and -5 .

(iv) $a = -1, d = 1/2$

ANSWER:

Let the AP be $a_1, a_2, a_3, a_4, a_5 \dots$

$$a_2 = a_1 + d = -1 + 1/2 = -1/2$$

$$a_3 = a_2 + d = -1/2 + 1/2 = 0$$

$$a_4 = a_3 + d = 0 + 1/2 = 1/2$$

Therefore, the A.P. series will be -1, -1/2, 0, 1/2

THUS, First four terms of this A.P. will be -1, -1/2, 0 and 1/2.

(v) $a = -1.25$, $d = -0.25$

ANSWER

Let the AP be $a_1, a_2, a_3, a_4, a_5 \dots$

$$a_1 = a = -1.25$$

$$a_2 = a_1 + d = -1.25 - 0.25 = -1.50$$

$$a_3 = a_2 + d = -1.50 - 0.25 = -1.75$$

$$a_4 = a_3 + d = -1.75 - 0.25 = -2.00$$

Therefore, the A.P series will be -1.25, -1.50, -1.75, -2.00

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THUS, first four terms of this A.P. will be -1.25, -1.50, -1.75 and -2.00.

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