Assignment

Homework1

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A Course Homework Assignment 1

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Problem 1

Solution. Let a_i denote the i th term of the AP , d denote the common diff, s denote the sum of first 20 terms

1 Given:

$$a_4 = 8, a_6 = 14$$

2 To find:

$$a_1 = ?\, d = ?\, s = ?$$

$$a_6 - a_4 = 2d$$
$$(i)d = \frac{a_6 - a_4}{2}$$
$$= \frac{6}{2}$$
$$= 3$$

$$a_1 + 3d = a_4$$
$$(ii)a_1 = a_4 - 3d$$
$$= 8 - 3(3)$$
$$= -1$$

$$n = 20$$

$$iii)s = a_1 + a_2 + ... + a_{20}$$

$$= \frac{n[2a_1 + (n-1)d]}{2}$$

$$= \frac{20[2(-1) + (20-1)3]}{2}$$

$$= \frac{20[-2 + (19)3]}{2}$$

$$= \frac{20 * [55]}{2}$$

$$= 550$$