

## Arithmetic Series

1. Find the common difference and the sum of the number of terms stated

(a)  $1 + 4 + 7 + \dots$  (17 terms)

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(b)  $19 + 12 + 5 + \dots$  (16 terms)

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2. Evaluate the following

(a)  $\sum_{r=1}^{32} r - 3$

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(b)  $\sum_{r=7}^{25} 3r - 2$

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3. Find the sum of all **odd numbers** between 100 and 400.

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4. An arithmetic series has a first term of 10 and a 17<sup>th</sup> term of 122. Find the common difference and the sum of the first 20 terms.

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5. It is given in an arithmetic series of  $n$  terms that  $S_{20} = 45$  and  $S_{40} = 290$ .  
Find the first term and the common difference. Find also the sum of the first 60 terms.

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6. The first and last terms in an arithmetic series are  $-12$  and  $22$ . The sum of all terms is  $260$ . Find the number of terms in the series.

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7. Given that  $\sum_{r=1}^{2n} (4r - 1) = \sum_{r=1}^n (3r + 59)$ , find the value of  $n$ .

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