

Geometric Series

1. Find the eighth term and the sum of the first eight terms of the GP 128, 32, 8, 2,..

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2. Evaluate the following correct to 2 d.p.

$$\sum_{r=0}^{30} (1.15)^r$$

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3. Find the sum to infinity of the GP 64, 48, 36, 27,

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4. Seven times the sum to infinity of a certain GP is equal to eight times the sum of its first three terms. Find the value of the common ratio of the GP.

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5. A piece of string is cut into eight pieces whose lengths are in a GP. The length of the longest piece is 10 times that of the shortest piece. If the string was originally 10m, find to the nearest cm, the length of the shortest piece.

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6. The second, sixth and fourteenth terms of an AP, whose first term is 1, themselves form the first three terms of a GP. Find (i) the common difference of the AP
(ii) the sum of the first ten terms of the GP

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7. The ratio of the second term to the fifth term of a GP is 27:1. If the first term is 36, find its sum to infinity.

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