

The sum of the infinite GP  $0.171 - 0.114 + 0.076$  is .....

**Solution:**

We have

$$S = 0.171 - 0.114 + 0.076 - \dots = S_1 - S_2$$

where

$$S_1 = 0.171 + 0.076 + \dots$$

$$S_2 = 0.114 + \dots$$

The sum of the infinite GP is

$$Sum = \frac{a_1}{1 - q}$$

In our case we have

1.

$$a_1 = 0.171,$$

$$q = \frac{0.076}{0.171} = \frac{4}{9}$$

Thus

$$S_1 = \frac{0.171}{1 - \frac{4}{9}} = 0.171 \cdot \frac{9}{5} = 0.3078$$

2.

$$a_1 = 0.114,$$

$$q = \frac{4}{9}$$

Thus

$$S_2 = \frac{0.114}{1 - \frac{4}{9}} = 0.114 \cdot \frac{9}{5} = 0.2052$$

And finally we have

$$S = S_1 - S_2 = 0.3078 - 0.2052 = 0.1026$$

**Answer:**

$$S = 0.1026$$