

10. Prove the following theorems:—

(1) If $a : b :: c : d :: e : f$, then $a : b :: ma + nc + qe : mb + nd + qf$.

(2) If $a : b :: c : d$, then if $a > b$, $a^m + d^m > b^m + c^m$.

(3) If $a : b :: c : d$, then $a + b : a - b :: c + d : c - d$.

11. In Geometrical Progression, prove that $s = \frac{ar^n - a}{r - 1}$.

12. Sum the following series:—

(1) $2 + 5 + 8 + \dots$ to 11 terms.

(2) $3 + 4\frac{1}{2} + 6\frac{3}{4} + \dots$ to 5 terms.

(3) $-5 - 3 - 1 \dots$ to 8 terms.

(4) Find the value of $.102363636 \dots$.

1. (a) T

(b) I

2. (a) 4

(b) I

3. (a) T

(b) If

4. (a) In

(b) In

5. (a) V

(b) If

6. VI. 20