

The first term of a geometric progression and the first term of an arithmetic progression are both equal to  $a$ .

The third term of the geometric progression is equal to the second term of the arithmetic progression.

The fifth term of the geometric progression is equal to the sixth term of the arithmetic progression.

Given that the terms are all positive and not all equal, find the sum of the first twenty terms of the arithmetic progression in terms of  $a$ . [6]

[illegible]