

**Follow IB notation conventions.**

Start with the formula sheet. Into the appropriate formula (M1), substitute values correctly (A1). Solve and write down the calculator display, with ellipse (...) (A1). Round to 3 significant digits (use  $\approx$ ) (A1).

**Geometric sequence and series**

1. Given a geometric sequence with  $u_1 = 9$  and  $r = \frac{4}{3}$

(a) Find  $u_8$ .

(b) Find  $S_8$ , the sum of the first eight terms of the sequence.

(c)  $S_k \approx 825.37$ . Find  $k$  algebraically.