

Quiz – practice (no calculator)

[1] In an arithmetic sequence,  $u_3 = 16$  and  $u_7 = 40$ .

[a] Find the common difference of the sequence. [b] Find the first term of the sequence.

[2] In a geometric sequence,  $u_2 = 16$  and  $u_4 = \frac{1}{16}$ .

[a] Find the common ratio of the sequence. [b] Find the first term of the sequence.

[3] Consider the arithmetic sequence  $75, 66, 57, \dots, -375$ .

[a] How many terms are in the sequence? [b] Find the sum of the sequence.

[4] Find the 40<sup>th</sup> term of the sequence  $\frac{p^4}{q^7}, \frac{p^{\frac{14}{3}}}{q^{\frac{17}{2}}}, \frac{p^{\frac{16}{3}}}{q^{10}}, \frac{p^6}{q^{\frac{23}{2}}}, \dots$

[5] Find the sum of the first 10 terms of this sequence:  $3a - 4b, 7a - 5b, 11a - 6b, \dots$

[6] Find the sum of the first 10 terms of the series:  $128 + 64 + 32 + \dots$

[7] Find the sum:  $81 - 27 + 9 - 3, \dots$

[8] Evaluate:  $\sum_{r=1}^{100} (3r - 5)$

[9] Evaluate:  $\sum_{r=1}^{\infty} \frac{1}{2} \left( \frac{5}{6} \right)^r$

[10] Evaluate:  $\sum_{r=0}^{\infty} 10 \left( -\frac{2}{5} \right)^r$