Assignment #2
Sequences + Series

① Consider the geometric sequence : 2, 6, 18, 54.....

    a) what is the common ratio ? ___   b) List the next 3 terms _____

    c.) Calculate the 30th term (show work)

                                    ⸱⸱⸱using IB notation

    d) Find the sum of the first 10 terms, showing IB Notation.

② Find the nth term formula, U_n, for each sequence below

    a) 7, 14, 28, ...

    b) 80, 86, 92, 98, ...

    c) 80, 40, 20, ...

    d) 5, -10, 20, -40 ....

③ Find the sum of each sequence (showing work, etc.) of the first 11 terms.

    a) 2000, 500, 125, ...

    b) 10, 6, 2, -2, ...,

④ A geometric sequence has $U_1 = 8$ and $U_4 = 216$. what is
the common ratio ? (show work)

and find the general term, U_n.

and find S_7

⑤ Find the sum of each series (show details for all steps)

(a) $10 + 7 + 4 + \ldots \ldots -50$

(b) $\frac{1}{4} + \frac{1}{2} + 1 + \ldots \ldots +64$

⑥ Find K given that a geometric sequence has consecutive terms of

$$4 \quad , \quad K \quad , \quad K^2 - 1$$

⑦ The figure shows two adjacent triangular fields ABC and ACD where $AD = 30$ m, $CD = 80$ m, $BC = 50$m. $m\angle ADC = 60°$ and $m\angle BAC = 30°$
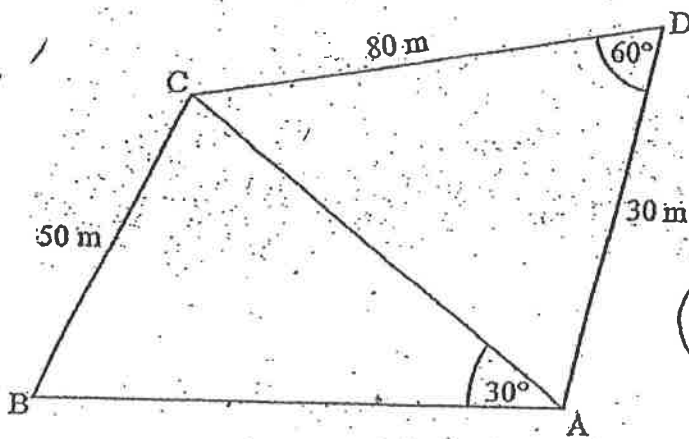

80 m

50 m

30 m

30°

B

A

D

60°

diagram not to scale

(a) Using $\triangle ACD$ calculate AC

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(b) Then calculate $m\angle ABC$

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(c) Calculate the area of the field ACD.