

Show all work clearly and in order. Justify your answers. You have 15 minutes for this quiz.

PROBLEM ONE Find a general formula for a_n for the following series. Be sure to indicate at what index your series begins.

$$\left\{4, -5, \frac{25}{4}, \frac{-125}{16}, \frac{625}{64}, \dots\right\}.$$

PROBLEM TWO Find the limit of the following sequence if it exists. If it is $\pm\infty$ say so.

$$a_n = (-1)^n \cos\left(\frac{1}{n}\right)$$