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# Problem Set #1

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**Due:** 10 Sep 2024 At the beginning of class

September 3, 2024

## **Q1: Binomial Approximation**

Consider the binomial approximation for  $\gamma(\beta)$ . For what range of  $\beta$  will the first order approximation be sufficient for 1% accuracy? Explain your thinking, and show your reasoning!

## **Q2: Classical Mechanics on an incline**

Taylor, Problem 1.2

## **Q3: More binomial approximation**

Taylor, Problem 1.14

## **Q4: Time dilation**

Taylor 1.20

## **Q5: Twin Paradox**

Taylor, 1.22