**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ PHY2048C, Mock Quiz 5**

**A- Read all the quiz once, or twice, before beginning to write. Make sure to comprehend all questions and start with those you feel most confident in.**

**B – Be clear and concise. There are no extra points for being verbose or writing extra.**

**C –Only use the white pages that I will provide. You have 60 minutes to answer the quiz.**

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**Problem 1** (Halliday, Resnik, Walker)

Where is the Center of Mass of the L-shaped body in the figure? Draw the vector of the effective gravitational force and specify if the rotation caused by it will be clockwise or counter-clockwise.

A diagram of a corner

AI-generated content may be incorrect.

**Problem 2**

From which of these axes of rotation can the shown torques balance? You may adjust the magnitude of these forces however you like but the position and direction are fixed.

A diagram of a line with arrows and a black dot

AI-generated content may be incorrect.

**Problem 3**

The wheel in the figure has mass M and is weighted with an additional mass m as shown. The coefficient of friction is sufficient to keep the wheel from sliding; however, it might still roll.

Show that it won’t roll only if

A black and white math equation

AI-generated content may be incorrect.A drawing of a circle and a triangle

AI-generated content may be incorrect.