

Prepare dynamic simulation model of the pendulum:

1. with the fixed hinge,
 2. with the controlled hinge position.
- ◆ Make a free body diagram
 - ◆ Describe the pendulum position in the defined coordinate system
 - ◆ Write down Newton equations
 - ◆ Arrange equations to a linear form with respect to angular accelerations and reaction in the rope
 - ◆ Prepare program code in Matlab (i.e. solve the set of linear equations and integrate results)

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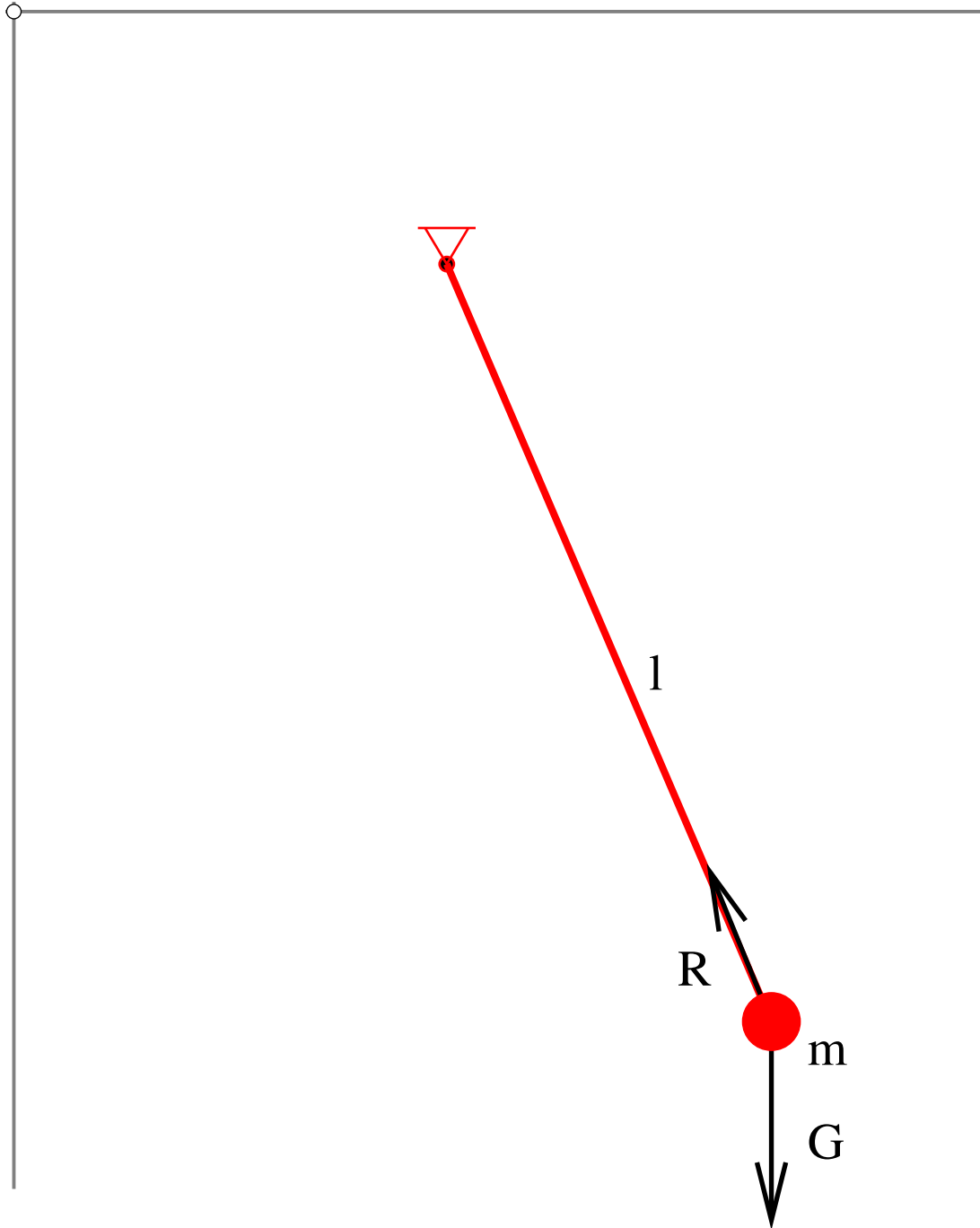
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Pendulum Dynamics - Forces



m p



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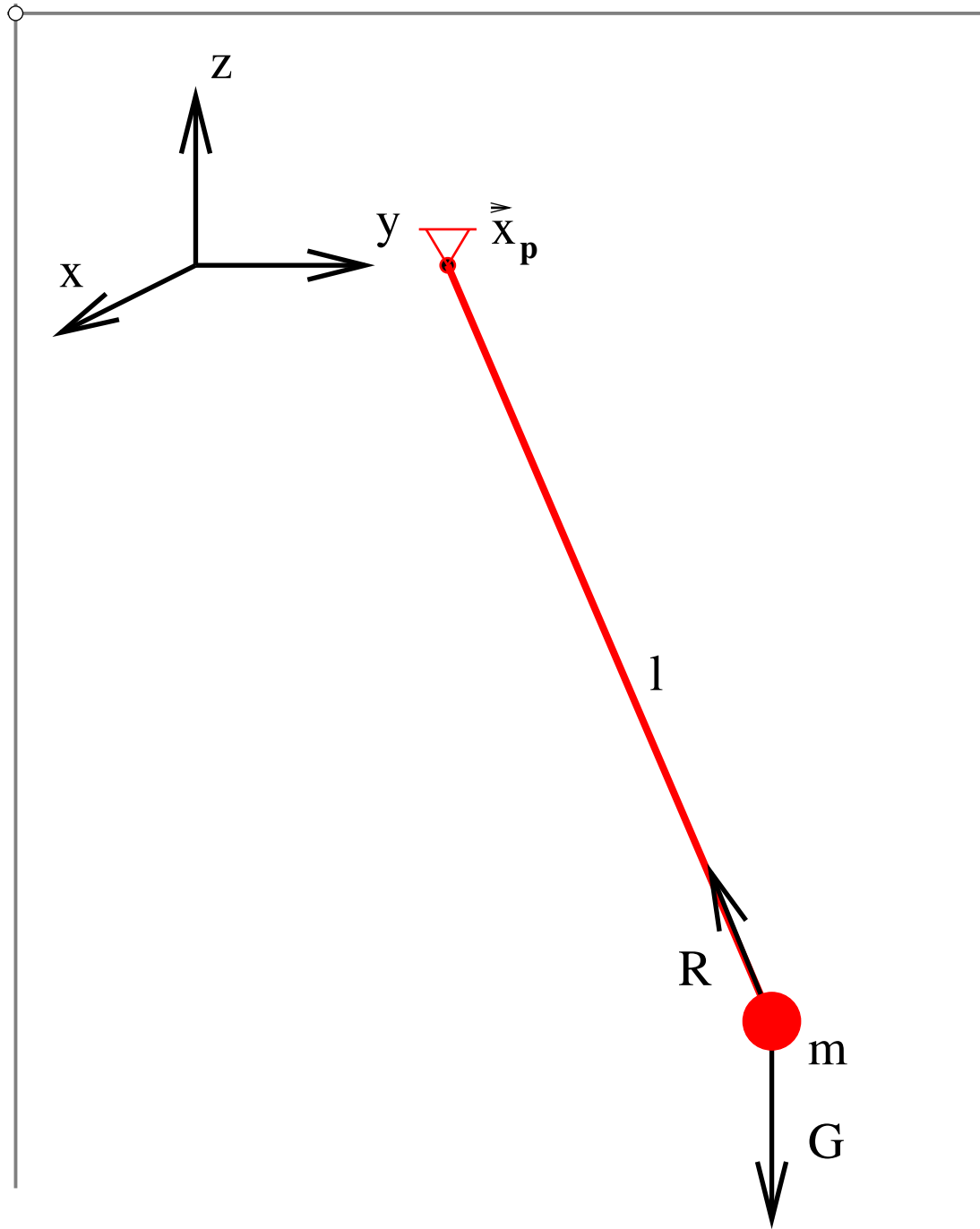
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Pendulum Dynamics - Coordinate System



m p



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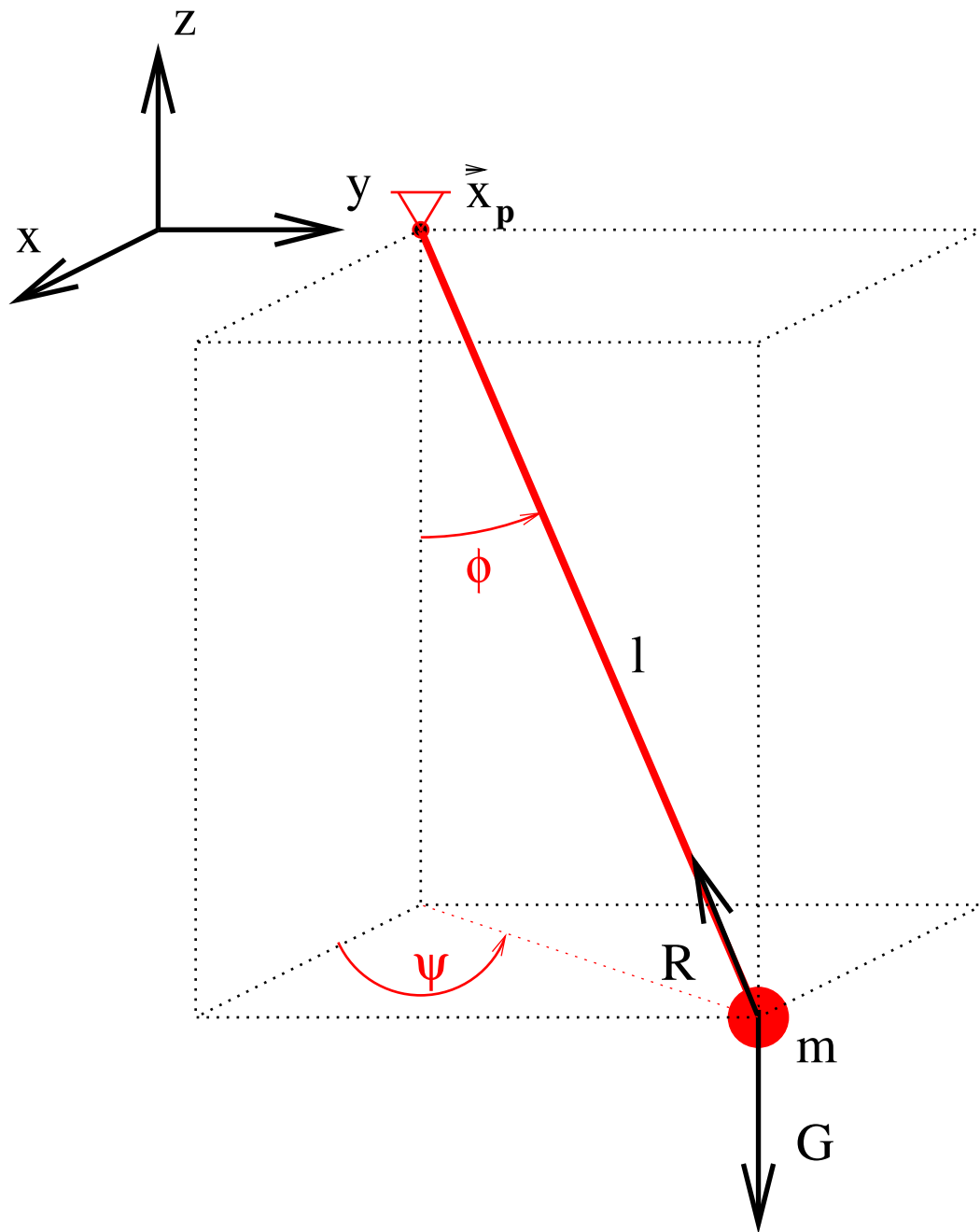
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Pendulum Dynamics - Parameterization



m p



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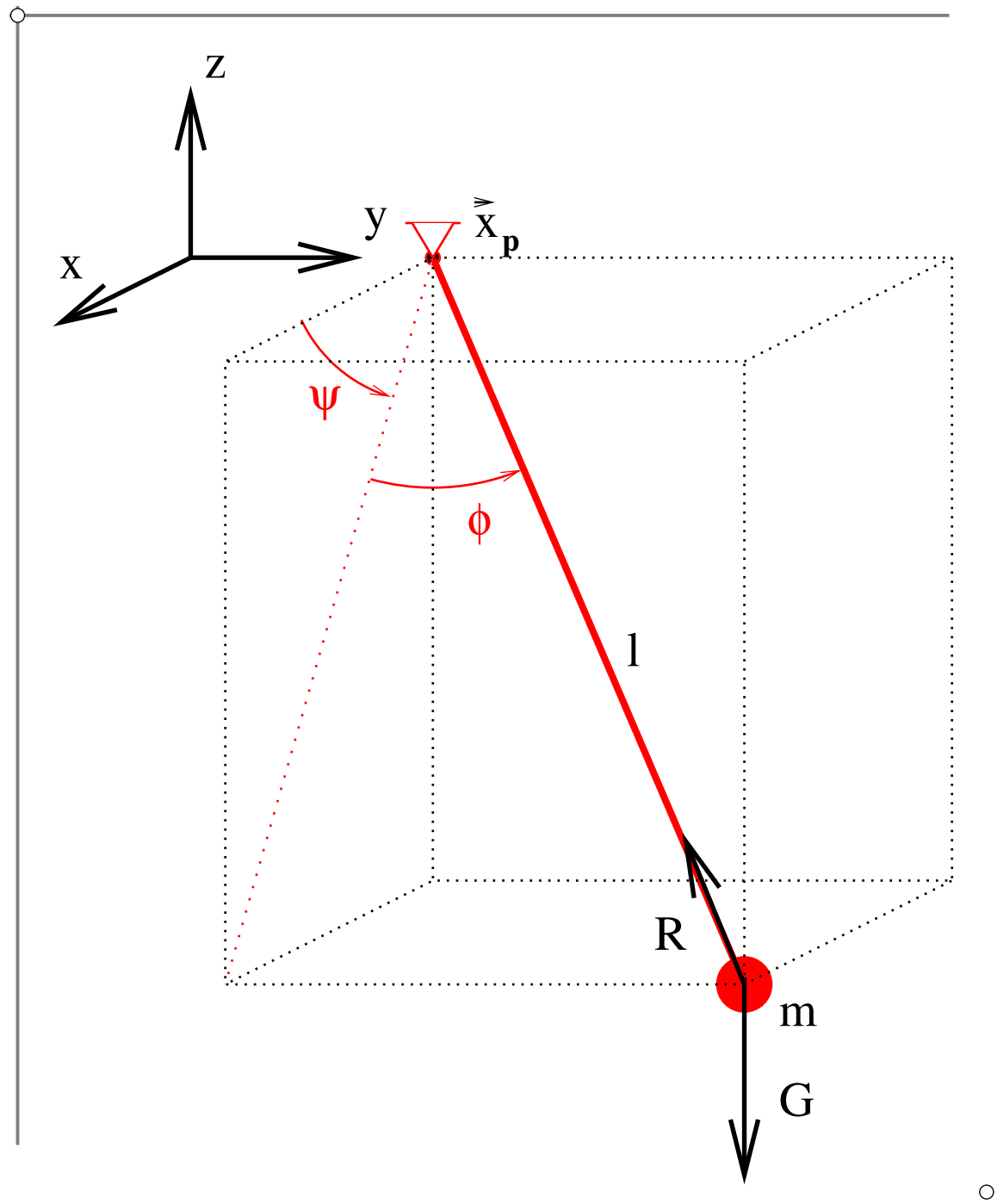
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Pendulum Dynamics - Coordinate System



m p



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