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| **PH 201 Pre-Lab 12** | **Moment of Inertia** | **Name** |  |

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| In this week’s lab we are going to examine moments of inertia.  |
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| 1. Consider the relationship $τ=Iα$. Plot $τ$ on the y axis and $α$ on the x axis. What is your slope? |
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| $$Slope=$$ |  |

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| 2. What should the y-intercept be? |
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| $$y-intercept=$$ |  |

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| 3. A mass m, falls from a height h to the floor. How long does it take to fall if it starts from rest? |
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| $$t=$$ |  |

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| 4. If a wheel of radius R has linear acceleration of a, what is the angular acceleration $α$ |
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| $$α=$$ |  |

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| 5. Again if you consider the relationship $τ=Iα$, but this time you plot $Ln(τ)$ on the y axis and $Ln(α)$ on the x axis, what would be the slope? |
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| --- | --- |
| $$Slope=$$ |  |

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| 6. What would the y-intercept be? |
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| --- | --- |
| $$y-intercept=$$ |  |

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| 7. How do you get moment of inertia (I) from the y-intercept? |
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| $$I=$$ |  |

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