

Quarter 1 Test

- Topics on test – Kinematics, Forces, Rotation, Circular Motion, Gravitation
- All Past AP Questions
- 24 Multiple-Choice, 2 Free Response
- 77 seconds per MC question – total 31 mins.
- 13 minutes per FR question – total 26 mins.
- Equation sheet & calculators for FR only.

Problem Solving Steps

- Understand the question.
- Make a prediction.
- Write down what you know. (Diagram?)
- Decide on a strategy.
- Solve the problem.
- Compare against your prediction. (Does the answer make sense?)
- Box your answer.

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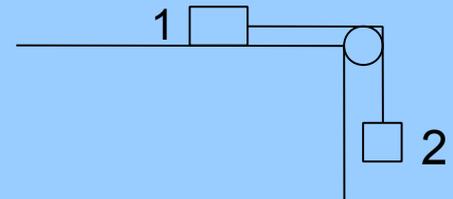
**10 mins
understanding = time
well-spent**

**1 hr solving without
understanding =
wasteful!**

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Look at the extremes.
Example: Two blocks over a pulley. What is a ?



When $M_1 \gg M_2$, $a \rightarrow 0$
When $M_1 \ll M_2$, $a \rightarrow g$

Terms and Phrases

- “Massless string” means $T_1 = T_2$
- “Non-extendable string” means $a_1 = a_2$
- “Justify” means support with words, equations, graphs.
- “Calculate” means show algebra and use numbers.
- “What is” means work is not always needed.
- “Determine” can mean the same as “justify” or “what is” depending on the question.
- “Derive” means start from the formula sheet and use math to get an answer.
- “In terms of” means don't use numbers. Make sure your answer contains the variables they ask for. (E.g. g , m , μ)

Other Tips

- No units are better than wrong units!
- No psychology – stick to physics!
- For MC use $g = -10$, and round other numbers if necessary. You only have to get close to an answer.
- Answer every MC question – no deducted points.
- If you need a number from a previous part, write “let x be 5 meters”.

Strategies

- Find easy questions super-fast and answer them.
- If it takes you forever, it probably isn't worth your exam time.
- Use signs, directions and unit analysis to eliminate answers.

At what rate does the child do work on the box? (A) μmgv (B) μgv (C) $v/\mu\text{mg}$ (D) $\mu\text{mg}/v$ (E) μmv^2

(Only two have the correct units.)

Plan

- Today – FR Questions
- Thursday – MC Questions
(Please download Nearpod.)
- Monday – Test.
- Tuesday – Day 1 of W, E & P