Final Exam Review Problems II

1. A 1.5 kg cart coasts without friction across a level surface, then up a 1.0 m long ramp that is inclined at 30⁰. When the cart reaches the top of the ramp it is going 5.0 m/s.
2. How fast was it going before coasting up the incline?
3. How far does it go before landing?
4. What was the cart’s acceleration on the incline?
5. A 100 kg man stands on the end of a 3.00 m long 25.0 kg diving board. The board is anchored in the middle, and the end opposite the man.
   1. Calculate the torque about the middle anchor point generated by the man’s weight.
   2. Calculate the magnitude and direction of the force each anchor must exert.

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