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During this quiz you are not to receive information, nor communicate with anyone, about the form, content, length, or difficulty of this quiz. Additionally, you are not to use any unauthorized resources while taking this quiz.

The allowed resources are: any notes you have collected during this course (handwritten, printed, or saved locally on your computer), blank sheets of paper or a digital tablet, writing utensil, a ruler, a protractor, and a non-communicating calculator. **Accessing the internet** while taking the quiz for any reason other than downloading, viewing, or turning in the quiz **is strictly prohibited**.

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https://studentlife.oregonstate.edu/studentconduct/academicmisconduct

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Physics 201

Weekly Quiz 6 | Corvallis Campus

11/04/2020

Collaboration is not allowed. You will have 30 minutes to download, solve, take pictures, AND upload this exam to Gradescope.

1. The new owner of a beautiful VW van secured a 70-kg box on the back of the vertical surface of the van with two ropes and is driving down a straight road at a constant 30 mph. Both ropes make the same angle with respect to the horizontal, and the new owner ties the ropes such that the box is pushing against the vertical surface of the bus with triple the weight of the box. The van is also freshly waxed so you can ignore frictional forces.

    (a) Draw a FBD for a system that includes only the box.

    (b) How does the tension in rope 1 compare to the tension in rope 2: greater than, less, than or equal two? Briefly explain your reasoning in words, phrases, diagrams, etc…

    (c) What is the magnitude of tension in each rope?

    (d) Use Related Quantities sensemaking to evaluate your answer to part (c). How does it compare to your answer to part (b)?