

**Practice Quiz — MA16020 — February 7, 2018**

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A tank initially contains 50 liters of water. Sugary syrup, with a concentration of 100 grams of sugar per liter of water, is added to the tank at a rate of 4 liters per minute. Water drains out of the tank at 6 liters per minute.

1. (2 points) How long will it be until the tank is empty?
2. (3 points) Write a differential equation to describe the amount of sugar in the tank. Choose appropriate letters for your variables.
3. (5 points) Find the integrating factor for the differential equation you found in part 2. Simplify your answer completely.