

Calculus Class Worksheet #4 Unit 12 page 1

Solve each of the following problems. Show your complete solution neatly organized.

1. The rotation of a flywheel is opposed by a frictional force which produces a negative acceleration that is proportional to the velocity. If the wheel slows from 1200 r.p.m. to 900 r.p.m. in 3 minutes, then how fast will it be turning after another 3 minutes?

2. Suppose in problem 1 that the acceleration is proportional to the square of the velocity. Answer the same question.

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Solve each of the following problems. Show your complete solution neatly organized.

- 3. The population of a city increases at a rate that is proportional to the current population. If the population was 70,000 in 2000 and 78,000 in 2010, then estimate the population in 2020.**