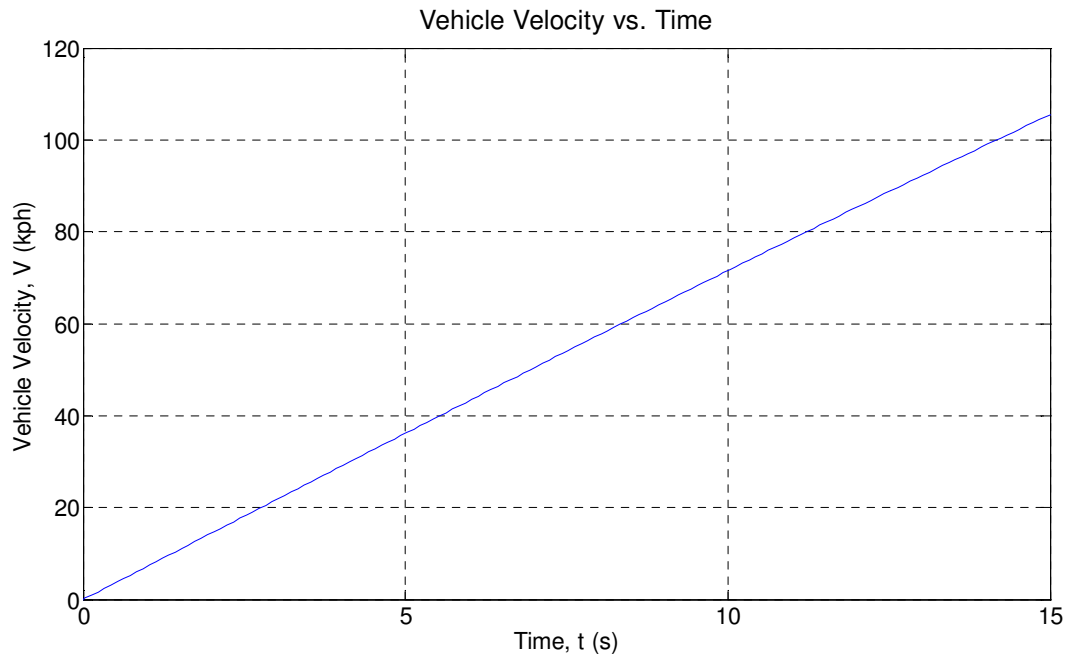
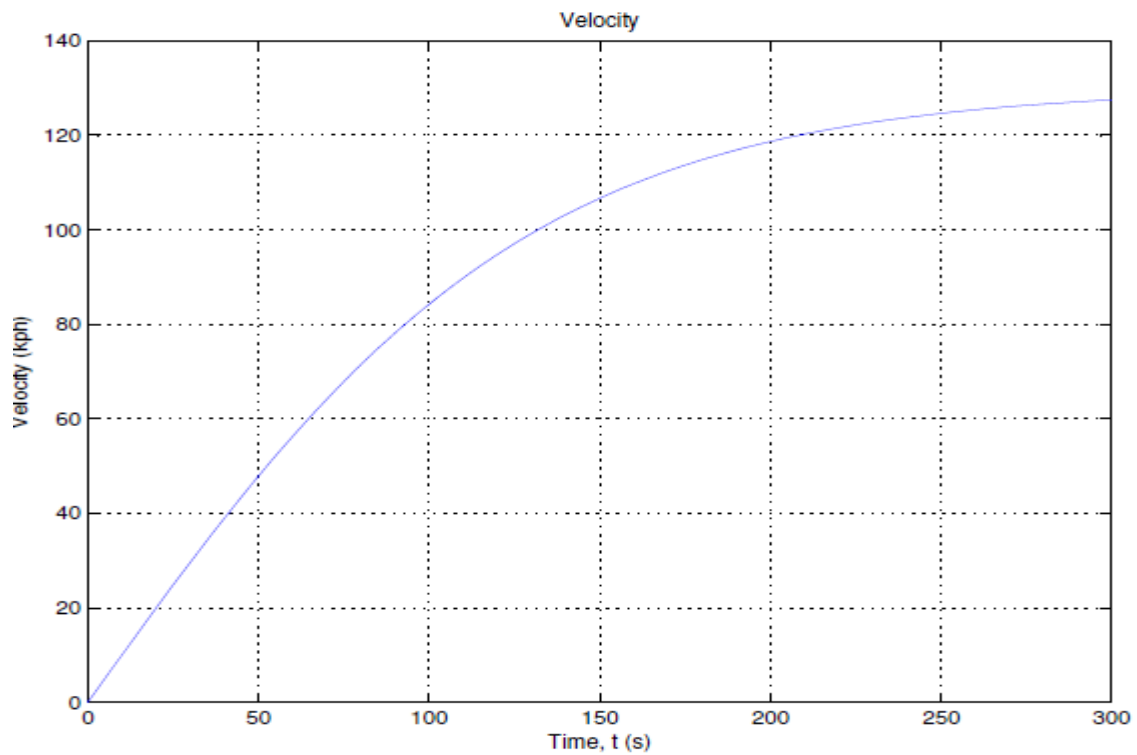


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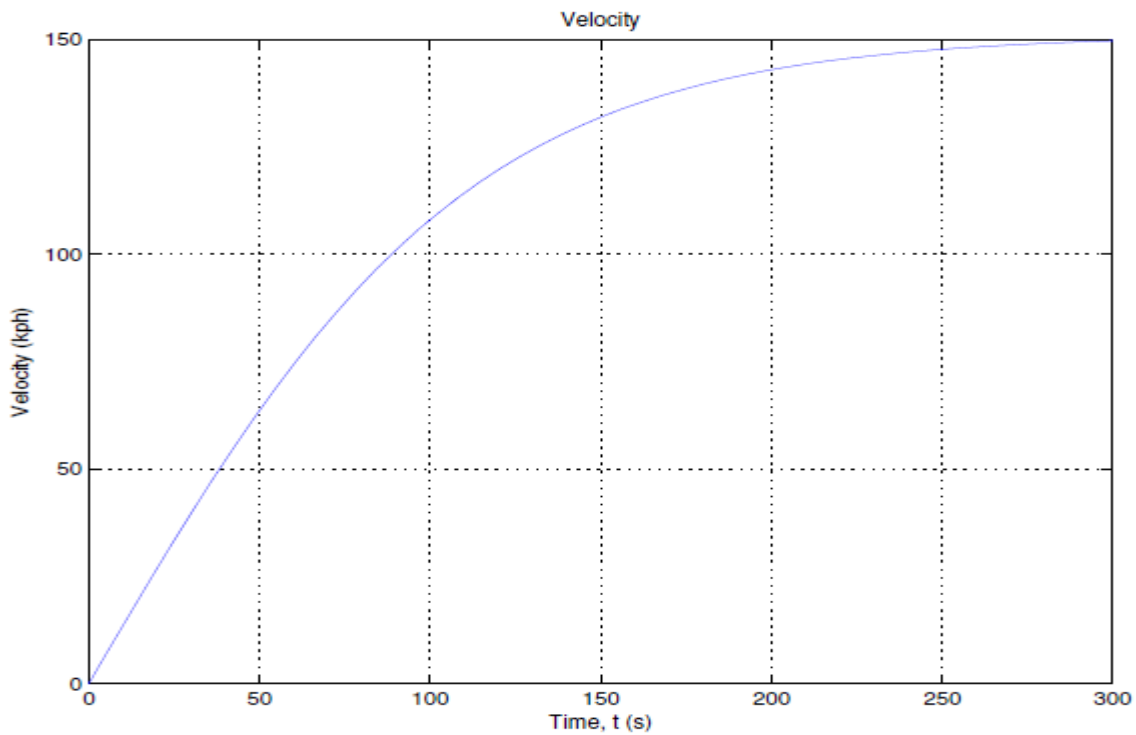
To find the 0-60 time for a 4500 N input, check the following graph:



60 mph (~100 kph) is reached at about 14 seconds. For the 1800 N input, 5% grade...



The steady state speed reached is about 130 kph. For the 0 N input and -5% grade...



The steady state speed reached is ~150 kph.

Essay Question:

If a saturation block was implemented into the model and the same cases were ran, the results would stay the same because the Ftr input never exceeds the weight of the vehicle. However, if the Ftr input was to exceed the weight, the saturation block would cap the Ftr at the weight of the vehicle.