1. Are the services of Middletown’s snow plows rival or nonrival? Excludable or nonexcludable?

2. Work through problems 1, 2, and 6 of the Pindyck abd Rubinfeld externalities reading.

3. Look at the review questions at the end of chapter 8 of Shepherd and Shepherd, especially numbers 1 and 6.

Answers:

1. Plowed streets are both nonrival and nonexcludable. They are nonrival because one car driving on a plowed street does not somehow “unplow” the street. And they are nonexcludable because there is no way to prevent cars from using the plowed streets.

On the other hand plowed driveways are rival and excludable. They are rival because if one driveway is plowed, then the time and energy taken to plow it was not used on another driveway. And they are excludable because normal property laws prevent drivers from using driveways without permission (note that the fact that most driveways are dead-end is important to enforcing these laws – through driveways are more difficult to exclude and are often used as illegal shortcuts).

If you define snowplow services somewhere in between these two extremes, such as comparing plowed and unplowed sections of town, then the services are partially rival and excludable.