

Quiz 1

ENGR 340—Introduction to Environmental Engineering

Instructor: Deborah Sills

30 August, 2017

Name:

1. **Console games and climate change: Researchers reveal carbon emissions of PlayStation®3 game distribution** [4 pts]

A recent study published in Yale's *Journal of Industrial Ecology* looked at the global warming potential of games for consoles such as PlayStation®3. This study concluded that Blu-ray Discs delivered via retail stores caused lower greenhouse gas emissions than game files downloaded over broadband Internet.

Choose a functional unit for a life cycle assessment that compares environmental impacts of games distributed via Blu-ray Discs to games distributed online.

1 GAME

1 MBYTE OF GAME

2. Define parts per million on a mass basis. [3 points]

$$\frac{\text{mass } i}{\text{mass tot}} \times 10^6$$

3. Define parts per million on a volume basis. [3 points]

$$\frac{\text{Vol } i}{\text{Vol tot}} \times 10^6$$