

1. [8pts] An object with initial temperature 380° F is placed in a room with constant temperature 60° F. One minute later its temperature is 220° F. How long will it take the object to cool off to a temperature of 70° F?

2. [8pts] Determine whether the DE: $2xy^2 \frac{dy}{dx} = 2y^3 + x^3$ is linear, separable, or homogeneous and then find a general solution for it.