Chapter 6 Question #6

For an aircraft flying at M=0.8 the temperature that the aluminum skin of the aircraft reaches is:

1) equal to the temperature of the atmosphere through which it flies

2) less than the temperature of the atmosphere through which it flies

3) greater than the temperature of the atmosphere through which it flies

4) I don't know

LO#4

Chapter 6 Question 6 Answer:

(3) greater than the temperature of the atmosphere through which it flies

The flow that stagnates on a moving body has a higher temperature that the static temperature in the stationary reference frame. Think about the flow that stagnates on a moving body as being given kinetic energy in order to keep up with the body.

Class Response (2003):