Title

Heat transfer

Problem Description

A computer chip generates 50W of heat. It is attached to an Aluminium heat sink of mass m = 100g. The computer's cooling fan activates when it detects that the heat sink's temperature is greater than 50 degrees Celsius. Assuming that the heat sink does not lose any heat to the surrounding air when the fan is off, and that it started at 20° C, how long can the computer run until the fan comes on?

Hint: $Q = mC\Delta T$ and C = 0.902[1] $\frac{J}{g^oC}$

Testing

The answer is 54.12 seconds

Time Target

*** less than 2 minutes

** 2-5 minutes

* greater than 5 minutes

Section

Data types and math operations

[1] http://www.iun.edu/~cpanhd/C101webnotes/matter-and-energy/specificheat.html