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SIMIODE Systemic Initiative for Modeling Investigations and Opportunities with Differential Equations

STUDENT VERSION
POTATO COOLING

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STATEMENT

Several years ago a group of students wanted to determine the time of death and wrote, "An experiment in estimating the time of death was performed where a potato was used instead of a human body. The time of death for the potato was considered to be the time it was taken out of the oven.The temperature of the potato at the time of 'death' was 194 °F. Temperature readings of the potato were taken every fifteen minutes for three hours and this data is offered in Table 1. The ambient temperature was 75.2 °F."

Model this cooling process and using your model determine the time at which the potato reaches body temperature which is 98.6 °F. Comment on whether or not this is a reasonable length of time for this to happen.

Time (min)	Temp (°F)
0	194.0
15	183.6
30	162.5
45	144.3
60	132.8
75	122.2
90	115.9
105	109.2
120	103.6
135	99.0
150	97.7
165	94.3
180	90.5

Table 1. Data on temperature of a potato after removal from oven.