

Calculus 1B Quiz 8

Name:

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1. (1 point) A pizza that comes out of the oven has a temperature of 370° Fahrenheit. Three minutes later you can eat it because it is 80° Fahrenheit. If the room temperature is 70° Fahrenheit, find the cooling constant for pizza (in degrees per minute).

(turn over)

2. (2 points) Blue whales feed on plankton. With an infinite supply of plankton, each year there would be a new whale for every 4 whales. However there is only a finite supply of plankton and this supply can feed at most 50 whales each year. There are currently 20 whales.

Write a differential equation that models the whale population under the restrictions of the plankton supply. Then solve the differential equation to find a formula for the number of whales after t years.