

Calculus 1B Quiz 8

Name:

GSI: Paul Baginski

Student ID:

1. (1 point) The radioactive isotope polonium 208 has a half-life of 3 years. If we begin with 30 grams, find a formula for the mass that remains after t years.

(turn over)

2. (2 points) 100,000 people live in Berkeley. Today, 10 zombies rose from the grave and began attacking people. Any person who is bitten by a zombie also becomes a zombie. During the initial panic and confusion, each zombie will convert two people into new zombies each day. However, as the number of people decreases, it becomes more difficult for the zombies to find them and convert them. If all the people have turned into zombies, then there will be no new zombies.

Write down a differential equation that models the number of zombies. Then solve this equation to obtain an explicit function for the number of zombies after t days.