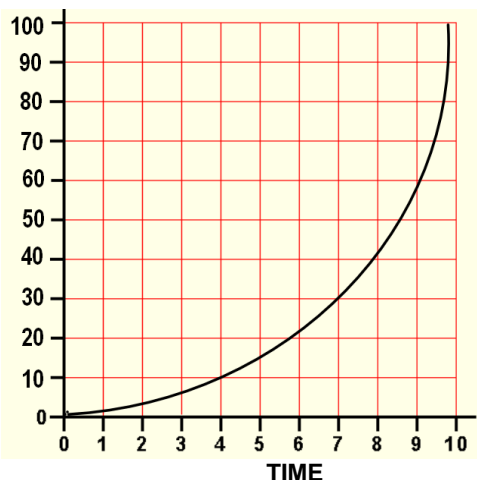# Algebra I EOC Practice #20

SPI 3102.3.11: **Analyze nonlinear graphs including quadratic and exponential functions that model a contextual situation.**

1. The graph represents a function related to a runner's movement over time.

TIME

Which function could this graph represent?

A. The speed of a runner as he decreases his rate of acceleration.
B. The speed of a runner as he slows down when approaching the finish line.
C. The distance of the runner from the start line as he accelerates.
D. The distance of the runner as he approaches the finish line at a constant speed.

2. The graph shows the growth in a bacterial culture over a period of three days.

Bacterial Culture

DAYS
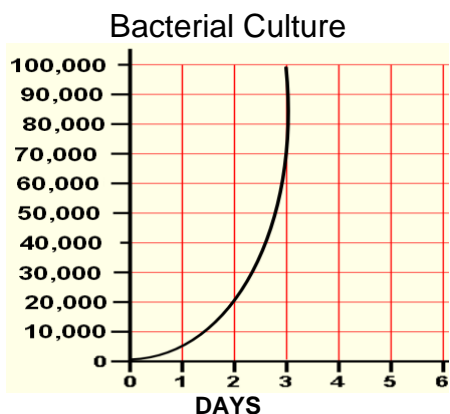
Which <u>best</u> describes the number of bacteria on the third day?

A. Greater than or equal to 100,000
B. Less than or equal to 100,000
C. About 90,000
D. About 1,000,000

3. A NFL kicker attempts a 45 yard field goal. The path of the football toward the uprights can be represented by the graph of a quadratic function. The vertical distance, *d* in feet, of the football as it travels over time *t*, is represented by the parabola shown below.

Field Goal

feet
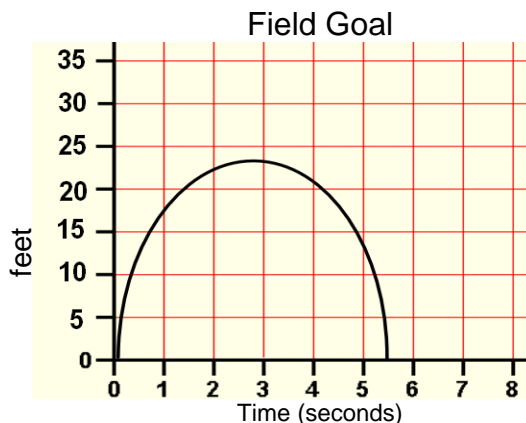
Time (seconds)

Once the football has traveled 1 second, in how many more seconds does it return to the same height?

A. 1.75
B. 3.00
C. 4.75
D. 3.75