Samples **Exponential growth SOLUTIONS**

1. Let P be the final population in millions. Then

$$\begin{aligned} P &= 100e^{0.06\times 12} \\ &= 100e^{0.72} \\ &\approx 205.44 \end{aligned}$$

Hence the final population is approximately 205.44 million bacteria.

2. Let P be the final population in millions. Then

$$\begin{aligned} P &= 100e^{0.06\times 14} \\ &= 100e^{0.84} \\ &\approx 231.64 \end{aligned}$$

Hence the final population is approximately 231.64 million bacteria.

3. Let P be the final population in millions. Then

$$\begin{aligned} P &= 500e^{0.07\times 5} \\ &= 500e^{0.35} \\ &\approx 709.53 \end{aligned}$$

Hence the final population is approximately 709.53 million bacteria.