Answer Key · Lesson 7.5: Exponential Growth and Decay

School Launch · Algebra I · Unit 7 · Worksheet A · for the parent

Key

1. $y = 2900(1.1)^t$; $\approx 5{,}651$

A town of 2{,}900 people grows 10% per year. Write the model and find the value after 7 years (nearest whole number).

2. $y = 200(1.1)^t$; ≈ 519

A town of 200 people grows 10% per year. Write the model and find the value after 10 years (nearest whole number).

3. $y = 4800(1.04)^t$; $\approx 6{,}074$

A town of 4{,}800 people grows 4% per year. Write the model and find the value after 6 years (nearest whole number).

4. $y = 3100(1.13)^t$; $\approx 6{,}454$

1. Growth/decay factor $= 1 \pm$ rate as a decimal.
2. $y = a(b)^t$ with $t = 6$.

A town of 3{,}100 people grows 13% per year. Write the model and find the value after 6 years (nearest whole number).

5. $y = 1800(1.07)^t$; $\approx 2{,}525$

1. Growth/decay factor $= 1 \pm$ rate as a decimal.
2. $y = a(b)^t$ with $t = 5$.

A town of 1{,}800 people grows 7% per year. Write the model and find the value after 5 years (nearest whole number).

6. $y = 2900(0.88)^t$; $\approx 1{,}530$

1. Growth/decay factor $= 1 \pm$ rate as a decimal.
2. $y = a(b)^t$ with $t = 5$.

A car worth $2,900 loses 12% of its value per year. Write the model and find the value after 5 years (nearest whole number).

7. $y = 2200(1.12)^t$; $\approx 7{,}653$

1. Growth/decay factor $= 1 \pm$ rate as a decimal.
2. $y = a(b)^t$ with $t = 11$.

A town of 2{,}200 people grows 12% per year. Write the model and find the value after 11 years (nearest whole number).

8. $y = 1800(0.89)^t$; ≈ 895

1. Growth/decay factor $= 1 \pm$ rate as a decimal.
2. $y = a(b)^t$ with $t = 6$.

A car worth $1,800 loses 11% of its value per year. Write the model and find the value after 6 years (nearest whole number).

9. $y = 4300(1.09)^t$; $\approx 7{,}861$

1. Growth/decay factor $= 1 \pm$ rate as a decimal.
2. $y = a(b)^t$ with $t = 7$.

A town of 4{,}300 people grows 9% per year. Write the model and find the value after 7 years (nearest whole number).

10. $y = 2900(0.93)^t$; $\approx 1{,}404$

1. Growth/decay factor $= 1 \pm$ rate as a decimal.
2. $y = a(b)^t$ with $t = 10$.

A car worth $2,900 loses 7% of its value per year. Write the model and find the value after 10 years (nearest whole number).