Name

# Exponential Function Solving - Decay (Continuous) Equation to Value at Time

**1** What is the value of the final concentration given this model of a continuous decay of a radioactive material?

$$R = 700 \cdot e^{(-0.05 \cdot 4)}$$

| | | | |
|---|---|---|---|
| A | $R = 690$ | B | $R = 573$ |
| C | $R = 735$ | D | $R = 590$ |

**2** What is the value of the final population given this model of a continuous decline of a bird population?

$$P = 900 \cdot e^{(-0.02 \cdot 7)}$$

| | | | |
|---|---|---|---|
| A | $P = 1,085$ | B | $P = 782$ |
| C | $P = 970$ | D | $P = 730$ |

**3** What is the value of the final concentration given this model of a continuous decay of a radioactive material?

$$R = 200 \cdot e^{(-0.09 \cdot 6)}$$

| | | | |
|---|---|---|---|
| A | $R = 165$ | B | $R = 116$ |
| C | $R = 170$ | D | $R = 155$ |

**4** What is the value of the final population given this model of a a continuously declining bacteria population?

$$P = 500 \cdot e^{(-0.09 \cdot 2)}$$

| | | | |
|---|---|---|---|
| A | $P = 425$ | B | $P = 395$ |
| C | $P = 417$ | D | $P = 605$ |

**5** What is the value of the final concentration given this model of a continuous reduction of a toxin concentration?

$$C = 900 \cdot e^{(-0.04 \cdot 2)}$$

| | | | |
|---|---|---|---|
| A | $C = 1,070$ | B | $C = 735$ |
| C | $C = 775$ | D | $C = 830$ |

**6** What is the value of the final population given this model of a continuous decline of a bird population?

$$P = 200 \cdot e^{(-0.06 \cdot 9)}$$

| | | | |
|---|---|---|---|
| A | $P = 150$ | B | $P = 116$ |
| C | $P = 95$ | D | $P = 160$ |

**7** What is the value of the final population given this model of a continuous decline of a bird population?

$$P = 400 \cdot e^{(-0.03 \cdot 2)}$$

| | | | |
|---|---|---|---|
| A | $P = 345$ | B | $P = 495$ |
| C | $P = 376$ | D | $P = 510$ |

**8** What is the value of the final population given this model of a continuous decline of a whale population?

$$P = 200 \cdot e^{(-0.08 \cdot 9)}$$

| | | | |
|---|---|---|---|
| A | $P = 66$ | B | $P = 121$ |
| C | $P = 122$ | D | $P = 97$ |