



LEVEL 1

Q1

$$y = 20(1 - 25)^x$$

B

Your school suffered from an outbreak of the flu on Tuesday. Initially, 20 students came to the school while infected. However, the number of infected students increased 25% per hour. Which function models Tuesday's outbreak?

C

$$y = 20(1 + 0.25)^x$$

D

$$y = 20(1 + 25)^x$$

$$y = 20(1 - 0.25)^x$$

A



LEVEL 1

Q2

$$y = 50000(1.2)^x$$

B

An internet survivor game had 50,000 participants; however, the game kicks off 20% of the participants each day. Which function models this game?

A

C

D

$$y = 50000(0.8)^x$$

$$y = 50000(120)^x$$

$$y = 50000(80)^x$$



LEVEL 1

Q3

$$y = 35000(0.18)^x$$

B

A brand new car costs \$35,000. The value of the car decreases by 18% annually. Which function models the yearly value of the car since its purchase?

C

$$y = 35000(-0.18)^x$$

D

$$y = 35000(0.82)^x$$

$$y = 35000(1.18)^x$$

A



LEVEL 1

Q4

$$y = 75000(1.024)^x$$

B

$$y = 75000(0.76)^x$$

A

The population of Zoe's hometown was 75,000 people last year. The population is growing at a rate of 2.4% each year. Which function models the grow of this city?

C

$$y = 75000(0.976)^x$$

D

$$y = 75000(1.24)^x$$



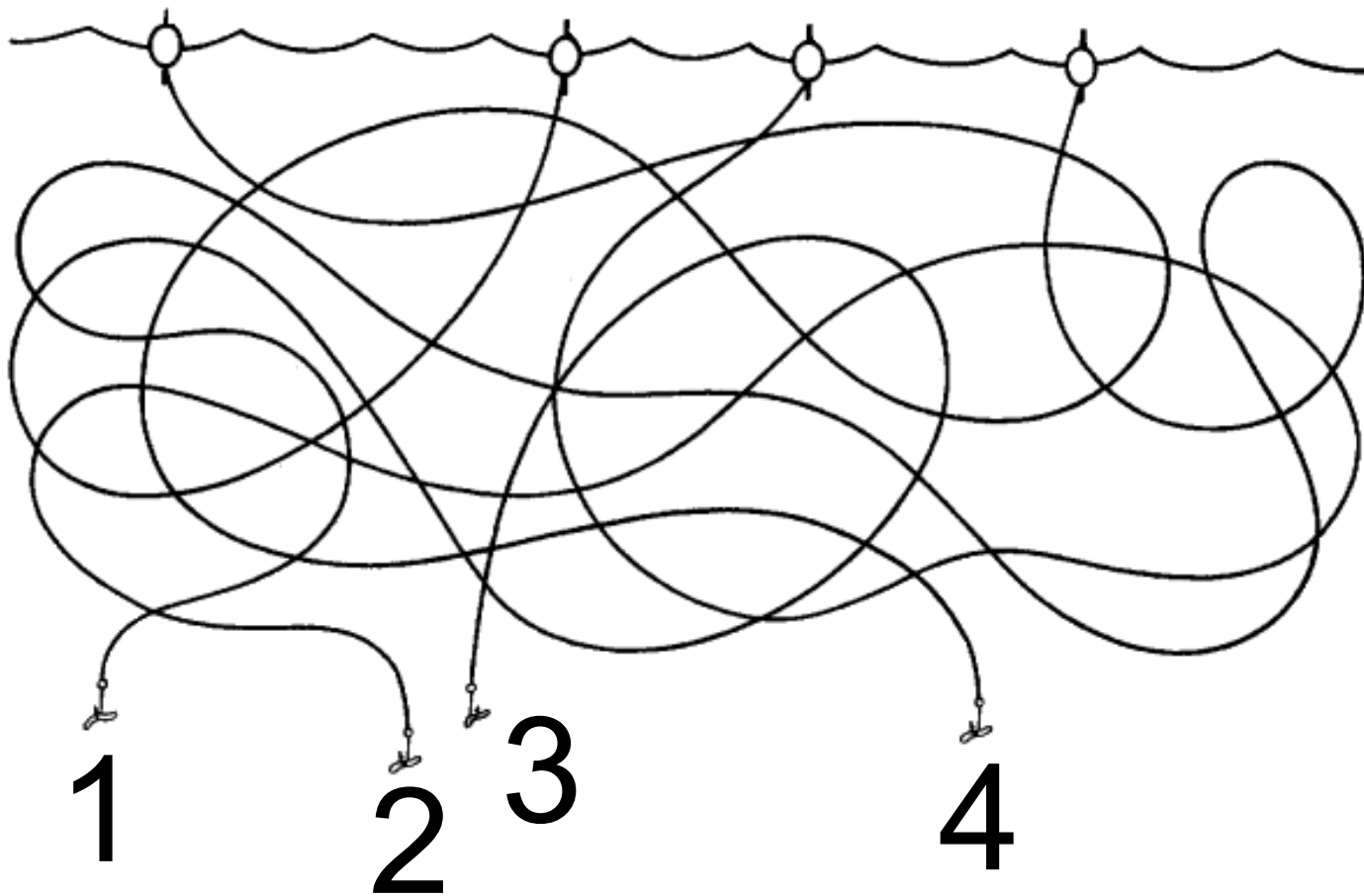
LEVEL 1

A

B

C

D





LEVEL 2

Solve each problem and write
the matching letter on the blank above the answer.

S

The value of a car is depreciating at a rate of 5% per year. In 2015, the car was worth \$32,000. Find the value of the car in 2018.

R

The starting salary at a bank is \$55,000 and increases at a rate of 1.8% yearly. What would the salary be after 4 years?

A

A city's population is increasing by 5% every year, and there are currently 39,000 people. What will the population be in 2 years?

H

If the number of bacteria in a colony doubles every 25 hours and there is currently a population of 10,000 bacteria, what will the population be 75 hours from now?

D

A house is losing value at a rate of 5.4% per year. In 2009, the house was worth \$131,000. Find the value of the house in 2019.

L

A colony of 10,000 ants can increase by 15% in a month. How many ants will be in the colony after 1 year?

N

The population of a town is decreasing at a rate of 2.2% per year. In 2001, the town had a population of 34,567. Find the population of the town in 2018.

V

A recycling center currently processes 50,000 tons of scrap metal each year, and this amount is increasing by 5% each year. How much metal will the plant be able to handle 8 years from now?

E

A new clothing line is quickly increasing in popularity. Every month, 10% more items of clothing are sold. If 15,000 items were sold this month, how many will be sold 2 months from now?

80,000 18,150

23,682 18,150

73,873 18,150

59,068 53,500

42,998 23,682

75,194 27,436



You have 120 grams of a radioactive form of nitrogen. If its half-life is 10 minutes, how much, in grams, will be left after 20 minutes?

START A

John deposited \$80 in a savings account earning 5% interest, compounded annually. How much interest will he earn in three years?

B

What is the value, in millions of dollars, of a downtown office building that cost 12 million dollars to build 20 years ago and depreciated at 9% per year.

C

Karin has \$70 in a savings account that earns 10% interest, compounded annually. To the nearest cent, how much interest will she earn in 3 years?

D

Stacy has \$500 in her account after 4 years earning 2.5% interest compounded annually. How much money, in dollars, did she start with?

E

An old coin is sold for \$2, and its value increases by 8% each year after it is sold. What is the value of the coin, in dollars, in 10 years.

F

The value of a textbook is \$69 and decreases at a rate of 15% per year for 11 years. What will be the value of the textbook, in dollars, after this period of time?

G

The half-life of a radioactive kind of cadmium is 14 years. How much will be left after 28 years, if you start with 72 grams of it?

H

How much of a radioactive kind of francium will be left after 15 minutes if the half-life is 5 minutes and you start with 80 grams?

I

A baby weighing 7 pounds at birth may increase in weight by 11% per month for the first 12 months. How much will the baby weigh after 1 year?

J

A tennis tournament begins with 128 participants. During each round, half of the players are eliminated. How many players remain after 5 rounds?

K

ESCAPE!

