Quantitative Skills & Reasoning - Math 1001

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East Georgia State College

Zoom Video Conference 10-10-2019

Quadratic Function Models

Score: 6/6 6/6 answered

✓ Question 1

Score on last try: **1 of 1 pts.** See Details for more.

› Next question | Try a similar question | You can retry this question below

Find all zeros of the function: $t(x) = x^2 - 4x - 96$.

The zeros are $x =$ ✓

Quadratic Function Models

Score: 6/6 6/6 answered

✓ Question 1

Score on last try: **1 of 1 pts.** See Details for more.

› Next question | Try a similar question | You can retry this question below

Find all zeros of the function: $t(x) = x^2 - 4x - 96$.

The zeros are $x =$ -8, 12 ✓

Quadratic Function Models

Score: 6/6 5/6 answered

Question 2

Determine the vertex of the quadratic function $y = x^2 - 14x + 24$:

- (7,-25)
- (7,24)
- (14,24)
- (14,-25)
- (7,48)

Quadratic Function Models

Score: 6/6 6/6 answered

✓ Question 2 ▾ < >

Score on last try: **1 of 1 pts.** See Details for more.

› Next question | Try a similar question | You can retry this question below

Determine the vertex of the quadratic function $y = x^2 - 14x + 24$:

- (7,-25)
- (7,24)
- (14,24)
- (14,-25)
- (7,48)

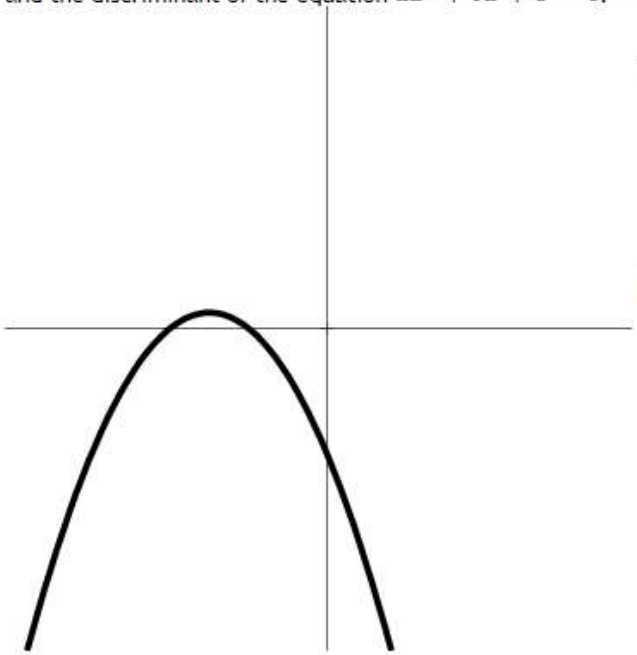
✓

Quadratic Function Models

Score: 6/6 5/6 answered

Question 3 ‹ ›

Use the graph of the function $f(x) = ax^2 + bx + c$ given below, what can you say about the value of a and the discriminant of the equation $ax^2 + bx + c = 0$?



The value of a...

- is equal to 0
- is greater than 0
- is less than 0

The value of the discriminant...

- is equal to 0
- is less than 0
- is greater than 0

Quadratic Function Models

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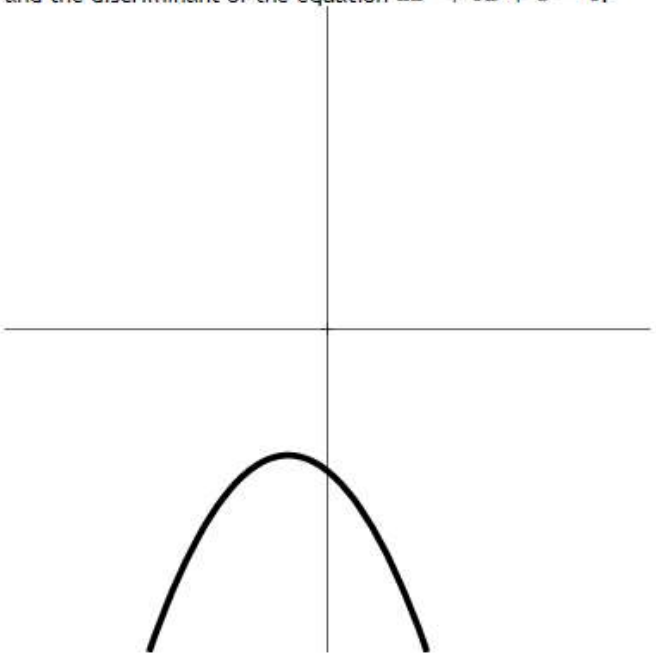
Question 4

Use the graph of the function $f(x) = ax^2 + bx + c$ given below, what can you say about the value of a and the discriminant of the equation $ax^2 + bx + c = 0$?



The value of a...

- is greater than 0
- is equal to 0
- is less than 0

The value of the discriminant...

- is less than 0
- is greater than 0
- is equal to 0

Exponential Function Models

Score: 8/8 8/8 answered

✓ Question 1 ▼ < >

Score on last try: **1 of 1 pts.** See Details for more.

› Next question | Try a similar question | You can retry this question below

Diseases tend to spread according to the exponential growth model. In the early days of AIDS, the growth factor (i.e. common ratio; growth multiplier) was around 2.2. In 1983, about 1800 people in the U.S. died of AIDS. If the trend had continued unchecked, how many people would have died from AIDS in 2005?

✓ people

(Note: once diseases become widespread, they start to behave more like logistic growth, but don't worry about that for the purpose of this exercise)

Submit Question

Exponential Function Models

Score: 8/8 8/8 answered

✓ Question 1 ▼ < >

Score on last try: **1 of 1 pts.** See Details for more.

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61457017930 ✓ people

(Note: once diseases become widespread, they start to behave more like logistic growth, but don't worry about that for the purpose of this exercise)

Submit Question

Exponential Function Models

Score: 8/8 8/8 answered

✓ Question 2 ▼ < >

Score on last try: **1 of 1 pts**. See Details for more.

> Next question | Try a similar question | You can retry this question below

Tacoma's population in 2000 was about 200 thousand, and has been growing by about 8% each year. If this continues, what will Tacoma's population be in 2020?

✓ people

Submit Question

Exponential Function Models

Score: 8/8 8/8 answered

✓ Question 2 ▼ < >

Score on last try: **1 of 1 pts**. See Details for more.

> Next question | Try a similar question | You can retry this question below

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932191 ✓ people

Submit Question

Exponential Function Models

Score: 8/8 8/8 answered

✓ Question 3 ▼ < >

Score on last try: **1 of 1 pts.** See Details for more.

> Next question | Try a similar question | You can retry this question below

Inflation causes things to cost more, and for our money to buy less (hence your grandparents saying "In my day, you could buy a cup of coffee for a nickel"). Suppose inflation decreases the value of money by 3% each year. In other words, if you have \$1 this year, next year it will only buy you \$0.97 worth of stuff. How much will \$100 buy you in 20 years?

\$ ✓

Exponential Function Models

Score: 8/8 8/8 answered

✓ Question 3 ▾ < >

Score on last try: **1 of 1 pts.** See Details for more.

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\$ 54.38 ✓

Exponential Function Models

Score: 8/8 8/8 answered

✓ Question 5

Score on last try: **1 of 1 pts.** See Details for more.

› Next question | Try a similar question | You can retry this question below

A vehicle purchased for $\$20700$ depreciates at a constant rate of $9\,\%$. Determine the approximate value of the vehicle 15 years after purchase.

Round to the nearest whole number.

Exponential Function Models

Score: 8/8 8/8 answered

✓ Question 5

Score on last try: **1 of 1 pts.** See Details for more.

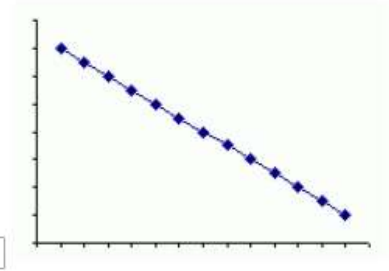
› Next question | Try a similar question | You can retry this question below

A vehicle purchased for $\$20700$ depreciates at a constant rate of $9\,\%$. Determine the approximate value of the vehicle 15 years after purchase.

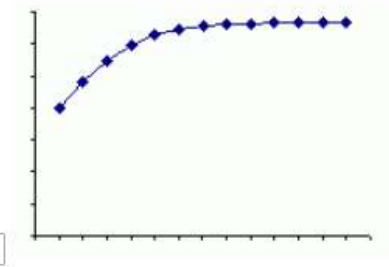
Round to the nearest whole number.

5030 ✓

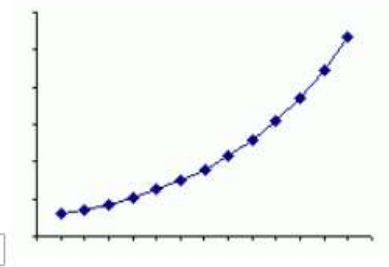
For each graph shown, match which growth model it best represents.



a ▼



c ▼



b ▼

a. Linear

b. Exponential

c. Logistic

d. None of these

✓

Car Value
The function $V(t) = 36200(0.94)^t$ represents the value (in dollars) of a car t years after its purchase. Use this function to complete the statements below.
The value of this car is decreasing ✓ at a rate of 6 ✓ percent per year ✓ The purchase price of the car was 36200 ✓ dollars ✓ .

House Value

The function $V(t) = 164000(1.09)^t$ represents the value (in dollars) of a house t years after its purchase. Use this function to complete the statements below.

The value of this house is [increasing ▾] ✓ at a rate of [9] ✓ [percent per year ▾] ✓

The purchase price of the house was [164000] ✓ [dollars ▾] ✓ .