

## Quiz 6

Name:

Franci Adjangba

Perm Number:

5894506

1) According to some reports, in some parts of the world the number of reported cases of a disease grows by approximately 26% every 2 days during its initial days of outbreak. This is to say, the number of people reported to have the disease is multiplied by about 1.26 every two days. If the growth continues this way, how many days would it take for the number of reported cases to quadruple?

2) Solve the below equation for  $x$ .

$$3 \cdot 4^{2x-3} = 9$$

$$(2x - 3 + 3) \cdot \log(4) + 3 = 9 + 3$$

$$2x \cdot \log(4) + 3 = 12$$

$$2x \cdot \log(4) + 3$$

$$\frac{2x \cdot \log(4) + 3}{\log(4)} = \frac{12}{\log(4)}$$

y =

$$2 \log(4)$$

3) I have  $x$  dollars. Veggie burgers cost  $v$  dollars each and sodas cost  $s$  dollars each. If I buy  $y$  veggie burgers, how many sodas can I buy?

$$x - yv$$

$$y = \frac{s}{x - yv}$$

4) Your friend Brian is taking a business class this summer and wants to use his skills to start a hot dog stand. He tells you that if he charges  $p$  dollars for a hot dog, he can find an equation for the total number of hot dogs he would sell, and use it to compute his total revenue from selling all those hot dogs. Let  $R(p)$  represent the total revenue of the hot dog stand (in dollars), if  $p$  is the price of a hot dog. What is the interpretation of  $R(5) = 200$ ,  $R'(5) = -10$ , in words?

if  
 Brian sells hot dogs for \$5  
 then he would sell 200

## Quiz 6

Name:

Rhyanne Apostol

Perm Number:

9693664

1) According to some reports, in some parts of the world the number of reported cases of a disease grows by approximately 26% every 2 days during its initial days of outbreak. This is to say, the number of people reported to have the disease is multiplied by about 1.26 every two days. If the growth continues this way, how many days would it take for the number of reported cases to quadruple?

1.26<sup>4</sup> every 2 days

2<sup>4</sup>

16

2) Solve the below equation for  $x$ .

$$3 \cdot 4^{2x-3} = 9$$

$$4^{2x-3} = 3$$

$$\log_4 3 = 2x - 3$$

$$\log_4 3 = 2x - 3$$

$$\log_4 3 + 3$$

$$\frac{1}{2} \log_{10} 3^2 = 2x + 3$$

$y =$

$$\frac{(\log_4 3) + 3}{2}$$

- 3) I have  $x$  dollars. Veggie burgers cost  $v$  dollars each and sodas cost  $s$  dollars each. If I buy  $y$  veggie burgers, how many sodas can I buy?

$$x - y(v)$$

$$= \frac{x - y(v)}{s}$$

$$y$$

$$(x - y)$$

$$(x - v)$$

$$12 \quad 3$$

$$y =$$

$$\frac{(x - y(v))}{s}$$

- 4) Your friend Brian is taking a business class this summer and wants to use his skills to start a hot dog stand. He tells you that if he charges  $p$  dollars for a hot dog, he can find an equation for the total number of hot dogs he would sell, and use it to compute his total revenue from selling all those hot dogs. Let  $R(p)$  represent the total revenue of the hot dog stand (in dollars), if  $p$  is the price of a hot dog. What is the interpretation of  $R(5) = 200$ ,  $R'(5) = -10$ , in words?

$$R(5) = 200$$

$$R'(5) = -10$$

$$200 = 5$$

$$R(5) = 200$$

$$R'(5) = -10$$

If Brian charges \$5 for a hotdog then his total revenue is \$200, and if Brian's total revenue was \$5 then the he charged \$-10 for a hot dog

## Quiz 6

Name:

Tanglin Wu

Perm Number:

566 8660

- 6 1) According to some reports, in some parts of the world the number of reported cases of a disease grows by approximately 26% every 2 days during its initial days of outbreak. This is to say, the number of people reported to have the disease is multiplied by about 1.26 every two days. If the growth continues this way, how many days would it take for the number of reported cases to quadruple?

F#

$$\begin{array}{r}
 1.26 \\
 \times 1.26 \\
 \hline
 756 \\
 252 \\
 \hline
 1.5876
 \end{array}$$

- 1.
2.  $1 \times 1.26$
- 3.
4.  $1.26 \times 1.26 = 1.5876$
- 5.
6.  $1.26 \times 1.26 \times 1.26$
- 7.
8.  $1.26 \times 1.26 \times 1.26 \times 1.26$

$$\begin{aligned}
 10 \times (1 + 26\%)^{\frac{n}{2}} &= 10^4 \\
 10 \times 1.26^{\frac{n}{2}} &= 10^4 \\
 1.26^{\frac{n}{2}} &= 10^3 \\
 \log 1.26^{\frac{n}{2}} &= \log 10^3 \\
 \frac{n}{2} \log 1.26 &= 3 \log(10) \\
 \frac{n}{2} &= \frac{3 \log(10)}{\log(1.26)} \\
 n &= \frac{6 \log(10)}{\log(1.26)}
 \end{aligned}$$

$$\begin{aligned}
 3 (1 + 26\%)^{\frac{n}{2}} &= 3^4 \\
 1.26^{\frac{n}{2}} &= \frac{3^4}{3} = 3^3 \\
 \frac{n}{2} \log 1.26 &= \log 3^3 \\
 \frac{n}{2} \log 1.26 &= 3 \log(3) \\
 \frac{n}{2} &= \frac{3 \log(3)}{\log(1.26)} \\
 n &= \frac{6 \log(3)}{\log(1.26)}
 \end{aligned}$$

$$\begin{aligned}
 X (1 + 26\%)^{\frac{n}{2}} &= X^4 \\
 X \times 1.26^{\frac{n}{2}} &= X^4 \\
 1.26^{\frac{n}{2}} &= X^3 \\
 \frac{n}{2} \log 1.26 &= \log(X^3) \\
 \frac{n}{2} &= \frac{\log(X^3)}{\log(1.26)} \\
 n &= \frac{2 \log(X^3)}{\log(1.26)}
 \end{aligned}$$

- 2) Solve the below equation for  $x$ .

$$3 \cdot 4^{2x-3} = 9$$

$$4^{2x-3} = 3$$

$$\log(4^{2x-3}) = \log(3)$$

$$(2x-3) \log(4) = \log(3)$$

$$\begin{aligned}
 X &= \frac{\log(3)}{2 \log(4)} + 3 \\
 &= \frac{\log(3) + 3 \log(4)}{2 \log(4)}
 \end{aligned}$$

y =

$$\frac{\log(3) + 3 \log(4)}{2 \log(4)}$$

3) I have  $x$  dollars. Veggie burgers cost  $v$  dollars each and sodas cost  $s$  dollars each. If I buy  $y$  veggie burgers, how many sodas can I buy?

$V$        $v$  dollars

$S$        $s$  dollars

$$vy + sa = x$$

$$sa = x - vy$$

$$a = \frac{x - vy}{s}$$

$y =$

$$\frac{x - vy}{s}$$

4) Your friend Brian is taking a business class this summer and wants to use his skills to start a hot dog stand. He tells you that if he charges  $p$  dollars for a hot dog, he can find an equation for the total number of hot dogs he would sell, and use it to compute his total revenue from selling all those hot dogs. Let  $R(p)$  represent the total revenue of the hot dog stand (in dollars), if  $p$  is the price of a hot dog. What is the interpretation of  $R(5) = 200$ ,  $R'(5) = -10$ , in words?

When Brian prices a hot dog at \$5, he can ~~set~~ get \$200 as the total revenue of the hot dog stand.

When Brian prices a hot dog at \$5, every extra <sup>dollar</sup> increase in price of hot dog would lead to ~~an~~ extra 10 dollar loss ~~is~~ of his revenue per unit.

## Quiz 6

Name:

Christian Peres

Perm Number:

7987662

1) According to some reports, in some parts of the world the number of reported cases of a disease grows by approximately 26% every 2 days during its initial days of outbreak. This is to say, the number of people reported to have the disease is multiplied by about 1.26 every two days. If the growth continues this way, how many days would it take for the number of reported cases to quadruple?

# peeps multiplied by 1.26 every 2 days

$$\begin{array}{r} 2 \overline{) 1.26} \\ \underline{12} \phantom{0} \\ 6 \phantom{0} \end{array}$$

.63 every day

$$\begin{array}{r} .63x = 4x \\ .63 \quad .63 \end{array}$$

$$\begin{array}{r} 1 \cancel{.63} \overline{) 4.000} \\ \underline{16378} \phantom{0} \\ 378 \phantom{0} \end{array}$$

2) Solve the below equation for  $x$ .

$$3 \cdot 4^{2x-3} = 9$$

$$\log(3 \cdot 4^{2x-3}) = \log(9)$$

$$\log(3) + (2x-3)\log(4) = \log(9)$$

$$\log(3) + 2x\log(4) - 3\log(4) = \log(9)$$

$$\frac{2x\log(4)}{2\log(4)} = \frac{\log(9) - \log(3) + 3\log(4)}{2\log(4)}$$

$$x = \frac{\log(9) - \log(3) + 3\log(4)}{2\log(4)}$$

$$x = \frac{\log(9/3) + 3\log(4)}{2\log(4)}$$

y =

$$\frac{\log(9/3) + 3\log(4)}{2\log(4)}$$

3) I have  $x$  dollars. Veggie burgers cost  $v$  dollars each and sodas cost  $s$  dollars each. If I buy  $y$  veggie burgers, how many sodas can I buy?

$$20 \quad 5 \quad 2 \quad x = v \quad s$$

$$x = \frac{yv + ns}{v + ns}$$

$$\frac{x}{v + ns} = y$$

$$y =$$

$$\frac{x}{v + ns}$$

4) Your friend Brian is taking a business class this summer and wants to use his skills to start a hot dog stand. He tells you that if he charges  $p$  dollars for a hot dog, he can find an equation for the total number of hot dogs he would sell, and use it to compute his total revenue from selling all those hot dogs. Let  $R(p)$  represent the total revenue of the hot dog stand (in dollars), if  $p$  is the price of a hot dog. What is the interpretation of  $R(5) = 200$ ,  $R'(5) = -10$ , in words?

$p$  dollars per hot dog.

$R(p)$  = total revenue

Brian's first function,  $R(5) = 200$  represents what the revenue (200) would be if Brian charged 5 per hot dog. So his 2nd function,  $R'(5) = -10$  represents how the price of the hot dog affects his revenue, with -10 representing the cost of selling the hot dog.

$$R = P + C$$



## Quiz 6

Name:

QI XUANHE

Perm Number:

3660948

1) According to some reports, in some parts of the world the number of reported cases of a disease grows by approximately 26% every 2 days during its initial days of outbreak. This is to say, the number of people reported to have the disease is multiplied by about 1.26 every two days. If the growth continues this way, how many days would it take for the number of reported cases to quadruple?  $4 \times \frac{2}{1.26}$

$$1:1 \quad 2:1.26 \quad 3:1.5876$$

$$\begin{array}{r} 1.26 \\ \times 1.26 \\ \hline 736 \end{array}$$

$$\text{make day 1 number } \frac{2.52}{1.26} = 2$$

$$1.26^x = 4$$

$$x = \frac{\log(4)}{\log(1.26)} \approx 5.99 \quad 6 \times 2 = 12$$

12

2) Solve the below equation for  $x$ .

$$3 \cdot 4^{2x-3} = 9$$

$$\frac{3 \cdot 4^{2x-3}}{3} = \frac{9}{3}$$

$$4^{2x-3} = 3$$

$$\Rightarrow (2x-3) \log(4) = \log(3)$$

$$x = \frac{\log(192)}{4 \log(2)}$$

y =

$$\frac{\log(192)}{4 \log(2)}$$

3) I have  $x$  dollars. Veggie burgers cost  $v$  dollars each and sodas costs  $s$  dollars each. If I buy  $y$  veggie burgers, how many sodas can I buy?

$$y = \frac{x - v \cdot y}{s}$$

$$y = \boxed{\frac{x - v \cdot y}{s}}$$

4) Your friend Brian is taking a business class this summer and wants to use his skills to start a hot dog stand. He tells you that if he charges  $p$  dollars for a hot dog, he can find an equation for the total number of hot dogs he would sell, and use it to compute his total revenue from selling all those hot dogs. Let  $R(p)$  represent the total revenue of the hot dog stand (in dollars), if  $p$  is the price of a hot dog. What is the interpretation of  $R(5) = 200$ ,  $R'(5) = -10$ , in words?

$R(5) = 200$  : if the hot dog price is 5 dollar each, then the total revenue for selling it is 200 dollar

$R'(5) = -10$  : if the hot dog price is 5 dollar each, then the total revenue for selling it is -10 dollar

## Name:

Anthony Zendejas

Perm Number:

4233865

↑ 26% every 2 days

Reported : x 1.26 every 2 days

days until quad?

7 days

2) Solve the below equation for  $x$ .

$$3 \cdot 4^{2x-3} = 9$$

$$\begin{aligned} 3 \times 4^{2x-3} &= 9 \\ \hookrightarrow 4^{2x-3} &= 9 \end{aligned}$$

$$\log(4^{2x-3}) = \log(9)$$

$$2x - 3 \log(4) = \log(9)$$

$$2x - 3 = \frac{\log(9)}{\log(4)}$$

$$2x = \frac{\log(9)}{\log(4)} + 3$$

$$x = \frac{\left( \frac{\log(9)}{\log(4)} + 3 \right)}{2}$$

$$y = \frac{\left( \frac{\log(4)}{\log(4)} + 3 \right)}{2}$$

3) I have  $x$  dollars. Veggie burgers cost  $v$  dollars each and sodas cost  $s$  dollars each. If I buy  $y$  veggie burgers, how many sodas can I buy?

$$\$x$$

$$\$v - \text{veggie} \quad \text{buy } y \# \quad \$v$$

$$\$s - \text{soda} \quad \text{buy } ? \# \quad \$s$$

$$x > \$v + \$s$$

$$x = y(v) + \$s$$

$$y =$$

$$\frac{x - s}{v}$$

4) Your friend Brian is taking a business class this summer and wants to use his skills to start a hot dog stand. He tells you that if he charges  $p$  dollars for a hot dog, he can find an equation for the total number of hot dogs he would sell, and use it to compute his total revenue from selling all those hot dogs. Let  $R(p)$  represent the total revenue of the hot dog stand (in dollars), if  $p$  is the price of a hot dog. What is the interpretation of  $R(5) = 200$ ,  $R'(5) = -10$ , in words?

$\$p$  hot dog } If Brian were to charge  $s$  dollars per hot dog, after plugging  $R(p)$  rev. that cost into his equation he finds that his total revenue would come to be 200 dollars. However, if he were to only sell  $s$  hot dogs at this price of  $\$s$ , he would not make a profit and would have lost  $\$10$ .

## Quiz 6

Name:

Yessenia Gil

Perm Number:

5005103

1) According to some reports, in some parts of the world the number of reported cases of a disease grows by approximately 26% every 2 days during its initial days of outbreak. This is to say, the number of people reported to have the disease is multiplied by about 1.26 every two days. If the growth continues this way, how many days would it take for the number of reported cases to quadruple?

$$1.26 \times 2 \text{ days}$$

$$4x = 1.26x$$

$$2 \left( \frac{4}{1.26} \right)$$

$$2 \left( \frac{1.26}{1.26} \right)$$

$$\overline{1.26}$$

$$1.26 \overline{)4}$$

$$\frac{8}{1.26}$$

$$8 / 1.26 \text{ days}$$

2) Solve the below equation for  $x$ .

$$\frac{3 \cdot 4^{2x-3} = 9}{3 \quad 3}$$

$$4^{2x-3} = 3$$

$$(2x-3) \log(4) = \log(3)$$

$$2x \log(4) - 3 \log(4) = \log(3)$$

$$\frac{\log(3) + 3 \log(4)}{2 \log(4)}$$

$$y = \frac{\log(3) + 3 \log(4)}{2 \log(4)}$$

3) I have  $x$  dollars. Veggie burgers cost  $v$  dollars each and sodas cost  $s$  dollars each. If I buy  $y$  veggie burgers, how many sodas can I buy?

$$\begin{array}{ccc} x & v & s \\ x - y(v) & & \\ \hline s & & \end{array} =$$

$$y = \boxed{\frac{(x - y(v))}{s}}$$

4) Your friend Brian is taking a business class this summer and wants to use his skills to start a hot dog stand. He tells you that if he charges  $p$  dollars for a hot dog, he can find an equation for the total number of hot dogs he would sell, and use it to compute his total revenue from selling all those hot dogs. Let  $R(p)$  represent the total revenue of the hot dog stand (in dollars), if  $p$  is the price of a hot dog. What is the interpretation of  $R(5) = 200$ ,  $R'(5) = -10$ , in words?

$$\begin{array}{lll} p = \text{hot dog} & R(5) & R'(5) = \\ R(p) = \text{Revenue} & \downarrow & \downarrow \\ & \text{hot dogs} = 200 & 5 \text{ hot dogs} = \text{loses } \$10 \text{ every day} \end{array}$$

$$\text{int. } R(5) = 200$$

At 5 hot dogs sold, Brian makes \$200 of Revenue

$$\text{int. } R'(5) = -10$$

At 5 hot dogs sold, Brian is starting to slow down the rate of getting revenue by \$10.

## Quiz 6

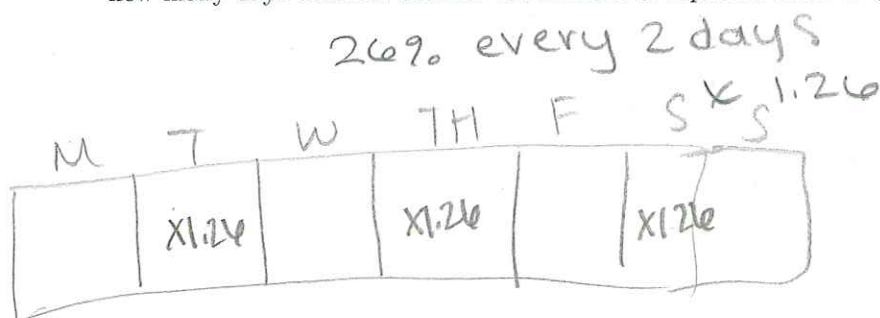
Name:

Breanna Flores

Perm Number:

4283842

1) According to some reports, in some parts of the world the number of reported cases of a disease grows by approximately 26% every 2 days during its initial days of outbreak. This is to say, the number of people reported to have the disease is multiplied by about 1.26 every two days. If the growth continues this way, how many days would it take for the number of reported cases to quadruple?



3

2) Solve the below equation for  $x$ .

$$3 \cdot 4^{2x-3} = 9$$

$$\log(3 \cdot 4^{2x-3}) = \log(9)$$

$$2x-3 \log(4) + \log(3) = \log(9) - \log(3)$$

$$\frac{2x-3 \log(4)}{\log(4)} = \frac{\log(9) - \log(3)}{\log(4)}$$

$$2x-3 = \frac{\log(9) - \log(3)}{\log(4)} + 3$$

$$\frac{2x}{2}$$

$$y = \left( \frac{(\log(9) - \log(3))}{\log(4)} + 3 \right) \div 2$$

- 3) I have  $x$  dollars. Veggie burgers cost  $v$  dollars each and sodas cost  $s$  dollars each. If I buy  $y$  veggie burgers, how many sodas can I buy?

$$x - v = y$$

② you pay for each a certain # burger

$$s = vy - x$$

④ so you can get this many sodas

③ taking from your money

$$s = vy - x$$

- 4) Your friend Brian is taking a business class this summer and wants to use his skills to start a hot dog stand. He tells you that if he charges  $p$  dollars for a hot dog, he can find an equation for the total number of hot dogs he would sell, and use it to compute his total revenue from selling all those hot dogs. Let  $R(p)$  represent the total revenue of the hot dog stand (in dollars), if  $p$  is the price of a hot dog. What is the interpretation of  $R(5) = 200$ ,  $R'(5) = -10$ , in words?

$R(5) = 200$  means if Brian charges 5 dollars for a hotdog he will make 200 dollars in revenue.  $R'(5) = -10$  means for every 5 dollar hotdog he is losing 10 dollars of total revenue.



## Quiz 6

Name:

Ekony Negrete

Perm Number:

5705215

1) According to some reports, in some parts of the world the number of reported cases of a disease grows by approximately 26% every 2 days during its initial days of outbreak. This is to say, the number of people reported to have the disease is multiplied by about 1.26 every two days. If the growth continues this way, how many days would it take for the number of reported cases to quadruple?

$$1.26 \rightarrow 2 \text{ days}$$

$$26\% \rightarrow 2 \text{ days}$$

$$\begin{array}{r} 1.26 \\ \times 1.26 \\ \hline 756 \\ + 2520 \\ \hline 12600 \\ \hline 15876 \end{array}$$

8

2) Solve the below equation for  $x$ .

$$3 \cdot 4^{2x-3} = 9$$

$$\log(4^{2x-3}) = \log(9)$$

$$(2x-3)\log(4) = \log 9$$

$$2x \log(4) - 3\log(4) = \log(9)$$

$$x = \frac{\log(9) + 3\log(4)}{2\log(4)}$$

y =

$$\frac{\log(9) + 3\log(4)}{2\log(4)}$$

3) I have  $x$  dollars. Veggie burgers cost  $v$  dollars each and sodas cost  $s$  dollars each. If I buy  $y$  veggie burgers, how many sodas can I buy?

$$x = v + s$$

$$x = vy + s$$

$$\frac{x - s}{v}$$

$y =$

$$x - s / v$$

4) Your friend Brian is taking a business class this summer and wants to use his skills to start a hot dog stand. He tells you that if he charges  $p$  dollars for a hot dog, he can find an equation for the total number of hot dogs he would sell, and use it to compute his total revenue from selling all those hot dogs. Let  $R(p)$  represent the total revenue of the hot dog stand (in dollars), if  $p$  is the price of a hot dog. What is the interpretation of  $R(5) = 200$ ,  $R'(5) = -10$ , in words?

If Brian prices the hot dogs at \$5, he makes 200 in revenue. At \$5, revenue decreases by 10.

## Quiz 6

Name:

~~Katie~~ Katie Meador

Perm Number:

816 574-8

1) According to some reports, in some parts of the world the number of reported cases of a disease grows by approximately 26% every 2 days during its initial days of outbreak. This is to say, the number of people reported to have the disease is multiplied by about 1.26 every two days. If the growth continues this way, how many days would it take for the number of reported cases to quadruple?

~~2~~

10

$$2^{1.26} = n$$

$$7 = 4n$$

$$4(2^{1.26}) = n$$

$$4(1.26 \log 2) = n$$

$$n \frac{1.26t}{2}$$

$$\left( n \frac{1.26t}{2} \right)^4 \rightarrow \times 4$$

$$n \frac{1.26^4 t^4}{2}$$

$$\log_4 \left( n \frac{1.26^4 t^4}{2} \right)$$

2) Solve the below equation for  $x$ .

$$3 \cdot 4^{2x-3} = 9$$

$$\frac{3 \cdot 4^{2x-3}}{3} = \frac{9}{3}$$

$$4^{2x-3} = 3$$

$$(2x-3) \log 4 = \frac{\log 3}{\log 4}$$

$$2x = \left( \frac{\log 3}{\log 4} + 3 \right) \frac{1}{2}$$

$$(\log_4 3 + 3) \frac{1}{2} = x$$

$$\log_4 3^{\frac{1}{2}} + \frac{3}{2}$$

y =

$$\log_4 3^{\frac{1}{2}} + \frac{3}{2}$$

3) I have  $x$  dollars. Veggie burgers cost  $v$  dollars each and sodas cost  $s$  dollars each. If I buy  $y$  veggie burgers, how many sodas can I buy?

$$x = \text{total}$$

$$v + s$$

$$yv + s = x - yv$$

$$s = x - yv$$

$$y =$$

$$s = x - yv$$

4) Your friend Brian is taking a business class this summer and wants to use his skills to start a hot dog stand. He tells you that if he charges  $p$  dollars for a hot dog, he can find an equation for the total number of hot dogs he would sell, and use it to compute his total revenue from selling all those hot dogs. Let  $R(p)$  represent the total revenue of the hot dog stand (in dollars), if  $p$  is the price of a hot dog. What is the interpretation of  $R(5) = 200$ ,  $R'(5) = -10$ , in words?

$p = \text{price}$

when a hot dog costs \$5, 200 hot dogs are sold. when the hot dog is \$5, the amount of hot dogs being sold is decreasing by 10 hot dogs.

when a hot dog is five dollars the amount of hot dogs being sold is 200. At this same price, the rate at which hot dogs are being sold is decreasing by 10.

when a hot dog is five dollars the total amount of money being made at the hot dog stand is 200\$. At this same price per hot dog the stand is losing ~~the~~ money at the rate of \$10 per sale.