

Algebra III

2/26/18

11.2 Exponential Equations

Warm-up:

Mike decided to invest \$500 in an account that had an interest rate of 3.4%. If the account compounded biweekly, how much money would he have in 10 years?

Bi weekly means = every other week

48 week in a year

So 24 times a year.

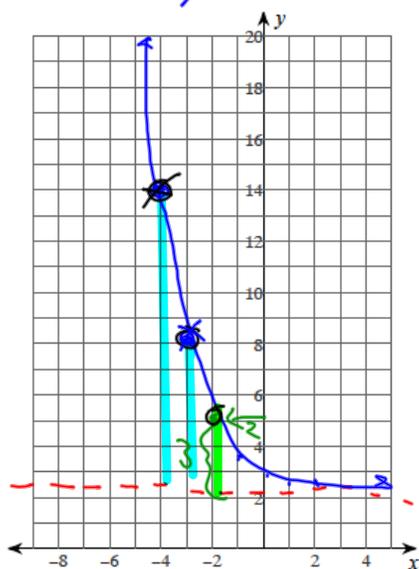
} weeks

$$500 \left(1 + \frac{.034}{24}\right)^{24(10)} = 702.30$$

Full comp!!

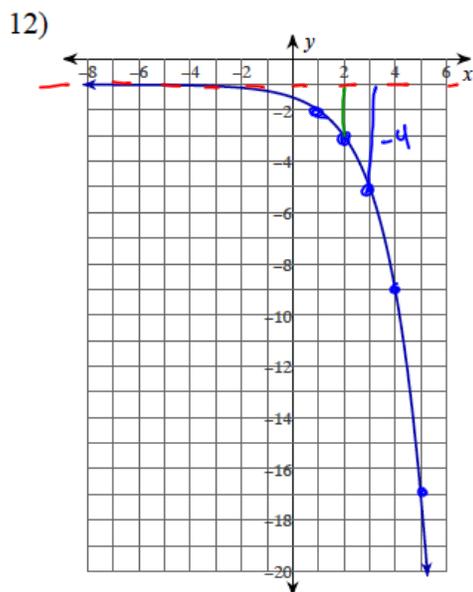
5) $f(x) = 3 \cdot \left(\frac{1}{2}\right)^{x+2} - 2$

mined 2 to the left +



$$y = 6 \left(\frac{1}{2}\right)^{x+3} + 2$$

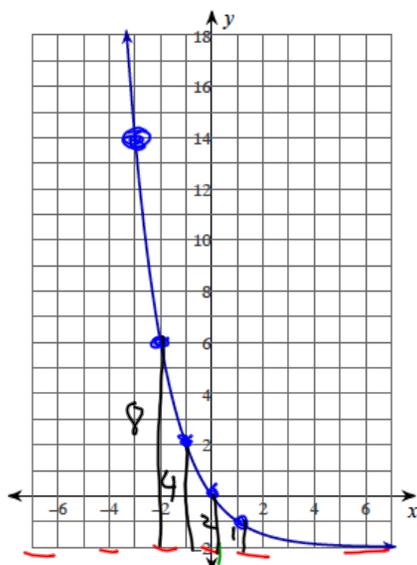
$$y = 12 \left(\frac{1}{2}\right)^{x+4} + 2$$



$$y = -2(2)^{x-2} - 1$$

$$y = -4(2)^{x-3} - 1$$

10)

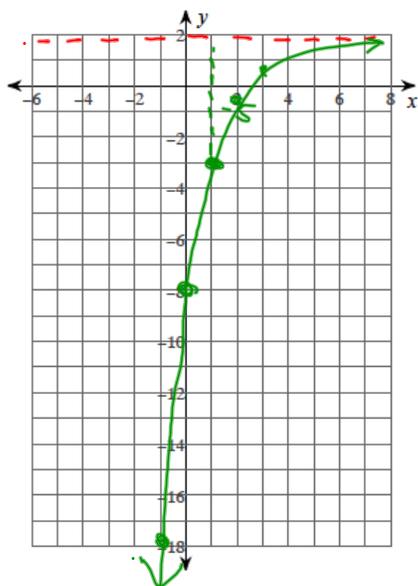


$$p \cdot b = 4$$

$$y = 2 \left(\frac{1}{2} \right)^x - 2$$

$$y = a (b)^x - c$$

$$6) f(x) = -5 \cdot \left(\frac{1}{2} \right)^{x-1} + 2$$



$$-5 \left(\frac{1}{2} \right) = \text{Next} = -2.5$$

$$-2.5 \left(\frac{1}{2} \right) = -1.25$$

Solve for x

$$3^x = 3^4$$

$$x = 4$$

$$7^{2x-1} = 7^7$$

$$2x - 1 = 7$$

$$2x = 8$$

$$x = 4$$

Solve for x

$$5^{2x} = 5^{3x-5}$$

$$2x = 3x - 5$$

$$-x = -5$$

$$x = 5$$

$$25^x = 125$$

$$(5^2)^x = 5^3$$

$$5^{2x} = 5^3$$

$$2x = 3$$

$$x = \frac{3}{2}$$

Solve for x

$$4^{x+3} = \frac{1}{8}$$

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

$$(2^2)^{x+3} = 2^{-3}$$

$$2^{2(x+3)} = 2^{-3}$$

$$2(x+3) = -3$$

$$2x+6 = -3$$

$$2x = -9$$

$$x = -\frac{9}{2}$$

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

$$\left(\frac{2}{3}\right)^{x+3} = \left(\frac{2}{3}\right)^2$$

$$x+3 = 2$$

$$x = -1$$

Solve for x

$$9^{2x-1} = 27^{x+5}$$

$$(3^2)^{2x-1} = (3^3)^{x+5}$$

$$3^{2(2x-1)} = 3^{3(x+5)}$$

$$4x-2 = 3x+15$$

$$x = 17$$

$$\left(\frac{1}{4}\right)^{x-1} = 32^{x+1}$$

$$(2^{-2})^{x-1} = (2^5)^{x+1}$$

$$-2(x-1) = 5(x+1)$$

$$-2x+2 = 5x+5$$

$$-3 = 7x$$

$$-\frac{3}{7} = x$$

$$\left(\frac{3}{5}\right)^{2x-1} = \frac{125}{27} \cdot \left(\frac{3}{5}\right)^{-3}$$

$$2x-1 = -3$$

Homework: pg. 546 #15-26

February 26, 2018

