Review Questions: Exponential Function Unit

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

#2 Find the equation of the exponential function ($y=a(b)^x+q$) with an asymptote at y=-2 and passes through the points (0,1), (1,10), (2,46)

#3 Solve $12(27^{-p-2}) = 36$

#4 State the equation of the asymptote and the x and y intercepts for the function $y = -\frac{1}{2}(2)^{2x+5} + 3$

#5 Graph $y = 3(2)^{2x+4} - 1$

#6 A car was purchased for #32 500. It depreciates at a rate of 5.5% per year. How long will it take for the car to be worth $20 000?

#7 Solve $2^{3x-4} = (8^{-x})(\frac{1}{32})^{2x+1}$

#8 Solve $(\frac{1}{125})^{2x}(5)^{3x+1} = \frac{1}{5}$

#9 Graph $y = -(\frac{1}{2})^{\frac{1}{2}x-6} + 2$

#10 State the equation of the asymptote and the x and y intercepts for the function $y = -3(\frac{1}{2})^{x-4} + 8$

#11 Solve $(9)^{2x-1}(81)^{3x+5} = (\frac{1}{3})^{x-2}$

#12 A colony of insects doubles in population every 72 days. If there were originally 1200 insects, how many will there be in 2 years?

Answers:

#2 $y = 3(4)^x - 2$
#3 p = -7 / 3
#4 asymptote y=3 , x-int (-1.2 , 0) , y-int (0 , -13)

#6 8.6 years
#7 x = -1 /16
#8 x = 2/3

#10 asympt y=8 , x-int (2.6,0) ,y-int (0,-40)
#11 x= -16/17
#12 1 352 979 insects