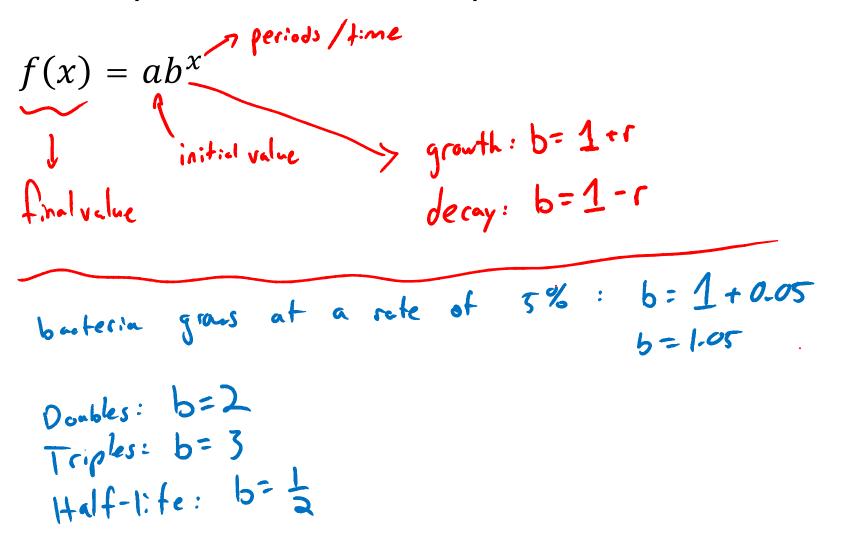
Mathematics 11U 4.7 – Applications Involving Exponential Functions Mr. D. Hagen The exponential function equation is:



A population of 320° frogs grows at a rate of $4.5\%^{\circ}$ per year. How many frogs will there be in 15 years?

h= 1+0.043

6=1.045

flx)=abx

f(15)= 320(1.045)'5

f(15) = 7619 24

: there are 619 frogs in 15 years

A new car depreciates at a rate of 20% per year. Steve bought a new car for \$26,000. a) How much will Steve's car be worth in 3 years? $f(x) = ab^{x}$ b = 1 - 0.2 b = 0.8

f(3) = 2600(0.0)f(3) = 913, 312

b) When will Steve's car be worth \$4000?

4000 = 26000 (0.8)×

$$f(y|x=6), f(\delta)={}^{8}6, 815.79$$

 $x=8, f(\epsilon)={}^{8}4, 362.08$

In abent

Unfortunately, its not always that simple....

rate yearly sate-every 3 years monthly locate-every 6 hours - every Y days ~ daily . $f(x) = \frac{1}{2}$ -Low much in 8 days?x = ?? $f(8) = 1(2)^{2}$ f(g) = h

A 200g sample of radio-active material has a halflife of 138 days. How much will be left in 5 years?

$$b = \frac{1}{2} \qquad f(x) = 200 \left(\frac{1}{2}\right)^{\frac{1}{135}} \qquad 365 \times 5 = 1825 degs$$

$$f(1825) = 200 \left(\frac{1}{2}\right)^{\frac{1835}{135}} \qquad f(1825) = 0.019 \text{ grans}$$