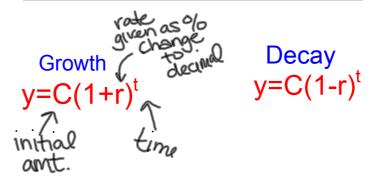
8.5-8.6 Exponential **Growth and Decay**



ex 1 You deposit \$500 at 8% interest for 6 yrs. Find the balance.

Step
$$(1+,08) = 1.08$$
 Parentheses

Step 2:
$$(1.08)$$
 y^{x} or y^{x} exponent (1.586)

Step 2:

$$(1.08)$$
 y x or x 6 exponent
 1.5868
Step 3:
 1.5868 (500) multiply
 793.437

\$793.44 Final Answer

- ex-2 A baby catfish weighs .3 grams. During the first six weeks of life, it grows 10% each day.
 - a) Write a model.

Virite a model.

$$y = ((1+r)^{t})$$
 $y = .3(1+.1)^{t}$
 $y = .3(1.1)^{t}$
 $y = .3(1.1)^{t}$

b) How much does it weigh in 6 wks?

change 6 was to days
$$6.7 = 42 = t$$

- Ex. 3 You bought a car for \$18,000. The value depreciates every yr. at a rate of 12%.
 - a) write a model

$$y = C(1-r)^{t}$$

 $y = 18,000(1-.12)^{t}$
 $(y = 18,000(.88)^{t})$

b) Estimate the value in 8 yrs.

Quiz

In 1995, you buy a baseball card for \$50 that will increase in value by 5% each year for 10 years.

- a) Write a model.
- b) How much is the card worth In 2002?
- c) what is the growth/decay factor?

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