

# Exponential Story Problems (type 3)

## Depreciation

↳ decreasing in value exponentially.

\* recall for increase

8% increase

$$A(t) = A_0 (1.08)^t$$

↳ add 2

For decrease;

ex) 10% per year

$$A(t) = A_0 (1 - 0.10)^t$$

$$= A_0 (.90)^t$$

\* If you are losing 10%, you are keeping 90% per year.

example: A car valued at \$28,800, depreciates in value by 8% per year. What will it be worth in 6 years?

$$A(t) = A_0 (1 - r)^t$$

$$r = 0.08 \Rightarrow 1 - 0.08$$

$$= 28800 (0.92)^6$$

$$= \$17463.02$$