

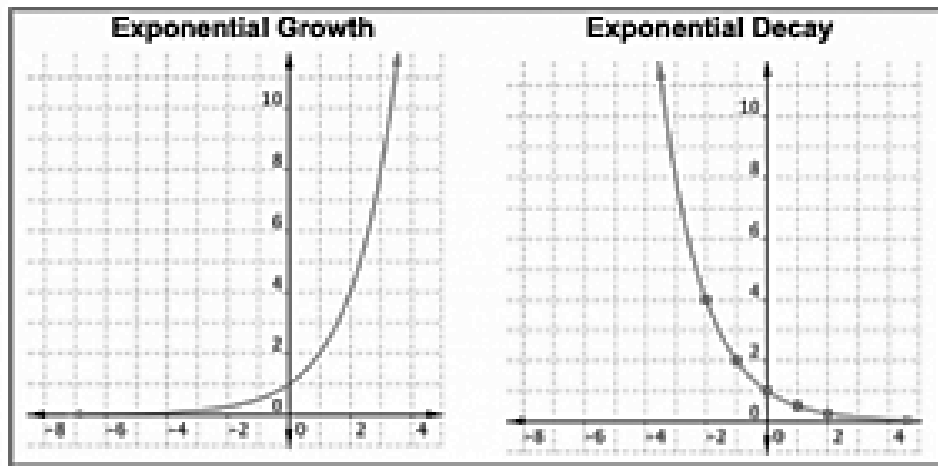
## 9.1 Writing Exponential Functions

Exponential functions are of the form:  $y = a \cdot (1 + r)^x$

$a$  is the \_\_\_\_\_

$r$  is the \_\_\_\_\_

$r$  is a growth rate, when....



$r$  is a decay rate, when....

State whether the following exponential functions are growth or decay:

a)  $f(x) = 3^x$

b)  $f(x) = \frac{3^x}{4}$

c)  $f(x) = 7\left(\frac{1}{5}\right)^x$

d)  $f(x) = 10 \cdot 5^x$

Review of Decimals  $\Leftrightarrow$  Percentages

Convert from Percent $\rightarrow$ Decimal	Divide the percent by 100. This is equivalent to moving the decimal point two places to the left.
Convert from Decimal $\rightarrow$ Percent	Multiply the decimal by 100. This is equivalent to moving the decimal point two places to the right.

e)  $.753 = \underline{\hspace{1cm}}\%$     f)  $52\% = \underline{\hspace{1cm}}$     g)  $.023 = \underline{\hspace{1cm}}\%$     h)  $125\% = \underline{\hspace{1cm}}$

Word Problem:

The population of the popular town of Brodyville in 2003 was estimated to be 35,000 people with an annual rate of increase (growth) of about 2.4%.

Equation: \_\_\_\_\_

What is the population of Brodyville in 2010?