

In 2010, aliens landed on Earth. Their initial population was 1,000 and it increased **exponentially**. In 2 years their population rose to 5,400. Consider the year 2010 as  $t = 0$ .

1. Find the growth rate  $k$  (rounded to 3 decimals) using the information from above.  
Then

2. How long until the population doubles?

3. What's their population in 2020?

4. How fast will their population be increasing in 2020?