

19.  $\mu = 3173$   
 $\sigma = 1100$

$n = 120$   
 $\bar{x} = 3263.37$

$\alpha = 0.005$  level.

STEP 1: State hypothesis

$H_0: \mu = 3173$

$H_a: \mu > 3173$

STEP 2: collect/summarize data

→ sample size is large so it is safe to use z-test

used stat crunch → one sample z-summary

$z\text{-stat} = 0.9000$

STEP 3: Find p-value

used stat crunch → one sample z-summary

$p\text{-value} = 0.1841$

STEP 4: Conclusion

Since the p-value is greater than  $\alpha$ , there is not enough sample evidence to prove that the mean credit card balance is higher than it was in 2009.