

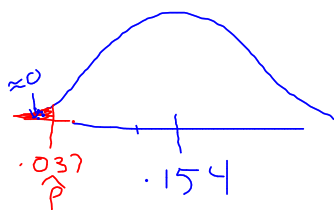
17-21

$$\hat{p} = \frac{15}{405} = .037$$

$$n = 405$$

a)  $p$  = the prop. of A.A teachers hired by Hazelwood School dist.

b)  $H_0: p = .154$   $H_{\dots}$  hiring at a rate = to pop.  
 $H_a: p < .154$  disc.  $\rightarrow$  hiring sign. less than the pop.



$n$  is large  
 $405(.154) \geq 10$   
 $\geq 10$

$\bullet$  assume the 405 is an SRS of teachers in the county

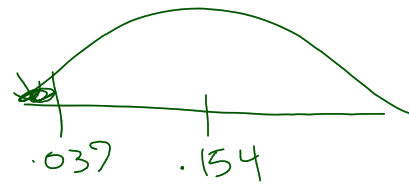
$$\sqrt{\frac{.154(1-.154)}{405}} = .0179$$

$$405(1-.154) \geq 10$$

$$\geq 10$$

$$z = \frac{.037 - .154}{.0179} = -6.5$$

$$p\text{-value} = Pr(Z < -6.5) \approx 0$$



with a  $p$ -value  $\approx 0$ , this is Sign. at the .01 level, so I reject  $H_0$ . Therefore, there is evid. that  $H_{\dots}$  is discriminating (hiring at a rate  $<$  available)

17-23

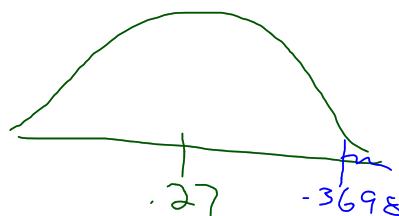
$p$  = the prop. of all V.V. who are div.

$H_0: p = .27$  (divorce rate of V.V. same as Amer. men)

$H_a: p > .27$  (V.V. have a higher divorce rate)

$\hat{p} = \frac{777}{2101} = .3698$

$n = 2101$



$\sqrt{\frac{.27(1-.27)}{2101}} = .0097$

$z = \frac{.3698 - .27}{.0097} = 10.32$

•  $n$  is large  
 $2101(.27) \geq 10$  AND  
 $2101(1-.27) \geq 10$   
 • assume SRS of V.V.

$P\text{-value} = Pr(z > 10.32) \approx 0$

With a  $p$ -value  $\approx 0$ , this is sign.

at any reasonable level, so I

reject  $H_0$ , that the divorce rate for V.V. is the same as all Amer. men

$\therefore$  there is evid. that V.V. have a sign. higher div. rate than all Amer. men (30-44).