17-1 (a-h on your own)
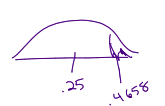
i) Let $p=$ the prop. of <u>all people</u>
_{population}
<u>who would pick the RF</u>
_{variable}

j) $H_o : p = .25$ all tires = likely

null hypothesis
(assumption)

k) $H_a : p > .25$ people are more likely
to pick RF

alternate
hyp.

l) $Z = \dfrac{.4658 - .25}{.0507} = 4.26$ $\sigma_{\hat{p}} = \sqrt{\dfrac{.25(.75)}{73}} = .0507$

test statistic

m) $Pr(z \geq 4.26) \approx 0$ p-value

n) <u>very</u> unlikely   the prob. of getting
less than all levels: 47% or more in the sample
10%, 5%, 1%   to say RF, IF the
actual prop. to say RF is 25%.

<u>Significance level</u>
α "cut-off"
if p-value is $< \alpha$ / then it's unlikely
(prob.)   (sign. level)   (stat. sign.)

<u>test decision</u>
reject H_o $\Rightarrow$ is sign. (p-value is small)
fail to reject H_o $\Rightarrow$ not sign.
(p-value $>$ sign. level)

o). $np \geq 10$ and $n(1-p) \geq 10$
(in e)

• SRS from pop. of interest

not a random sample (her students)
but could be considered
representative of all students

p) with a p-value of ≈ 0,
this is significant at
the 1% level.
There is enough evidence
to reject H_o.
People seem to be more
likely to choose RF.