

# Example (Exercise 8.41)

a) Find  $\chi^2_\alpha$  such that  $P(X^2 > \chi^2_\alpha) = 0.99$   
when  $v = 4$

$P(X^2 > \chi^2_\alpha) = \alpha$  by definition  
so we want  $\chi^2_{0.99}$  for  $v = 4$

$$\chi^2_{0.99} = 0.297 \text{ (row } v=4)$$

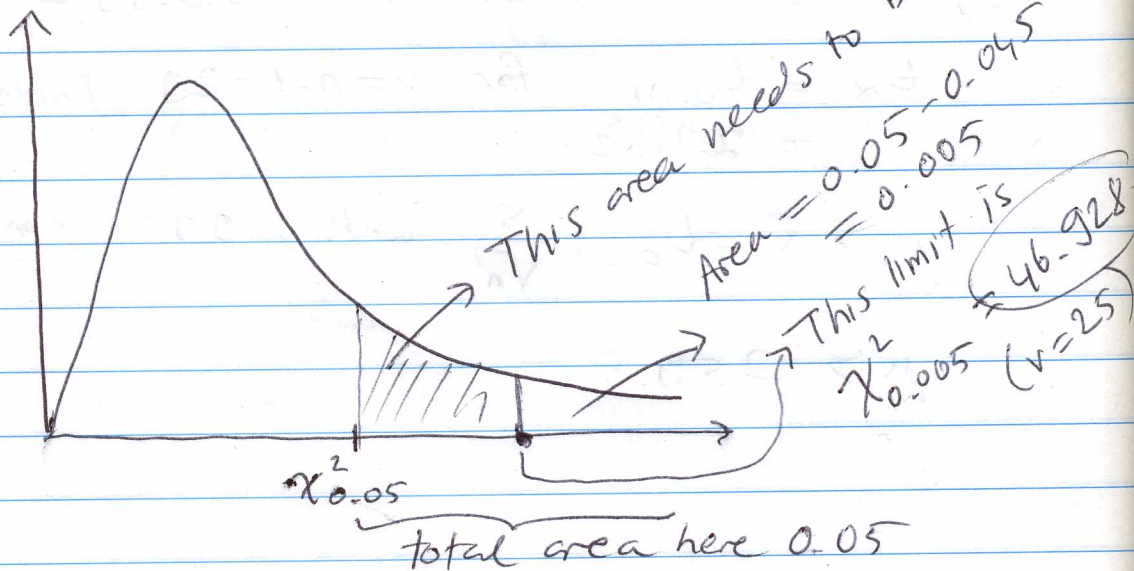
b)  $P(X^2 > \chi^2_\alpha) = 0.025$  when  $v = 19$

$$\chi^2_{0.025} = 32.852 \text{ (row } v=19)$$

c)  $P(37.652 < X^2 < \chi^2_\alpha) = 0.045$  when  
 $v = 25$

This is  $\chi^2_{0.05}$

from row  $v=25$  Table A.5



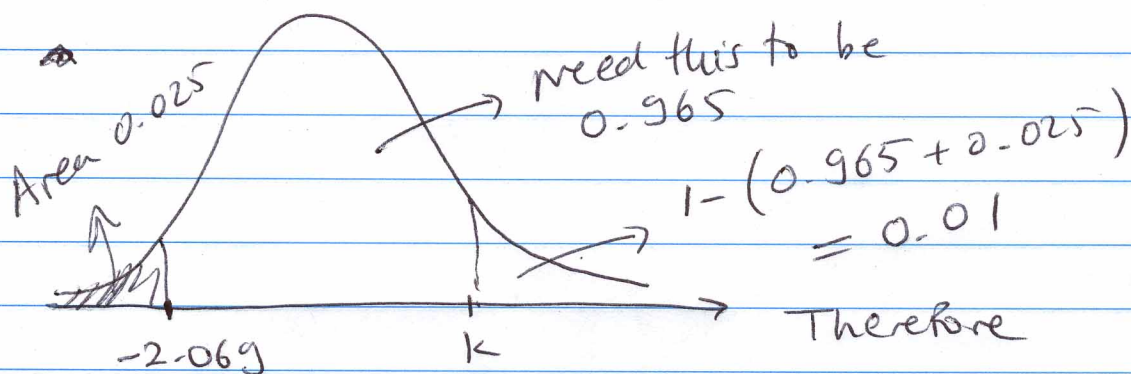
## Example (Exercise 8.49)

a) This question is about the  $t$ -distribution  
 $n=24$ . Find  $k$  such that

$$P(-2.069 < T < k) = 0.965$$

From Table A.4 row  $v=24-1=23$ , notice  
that  $2.069 = t_{0.025}$

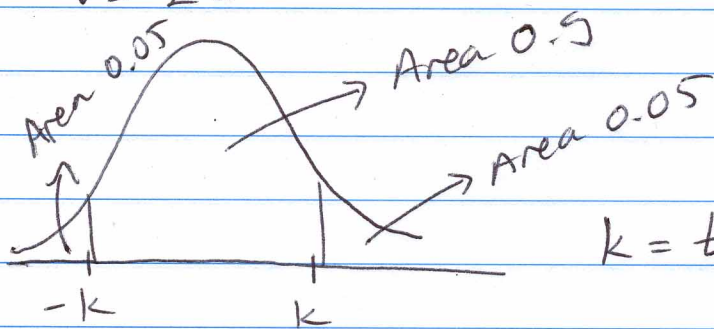
Therefore  $-2.069 = -t_{0.025} = t_{0.975}$



$$k = t_{0.01} = 2.5$$

( $v=23$ )

c)  $P(-k < T < k) = 0.9$   
 $v=23$



$$k = t_{0.05} = 1.714$$

( $v=23$ )