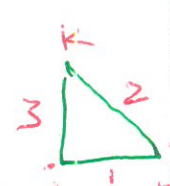


Is  $(1.2, 1.7)$  in triangle  $(1,1), (2,1), (1,2)$



Day 20 1/1  
CS 4620 Sp21

#1 Find the normalized tangents

# Find orthogonal vector

$$L_1 \frac{j-i}{|j-i|} \Rightarrow \frac{(1,0)}{1} \Rightarrow (1,0)$$

$$(0,1)$$

$$L_2 \frac{k-j}{|k-j|} \Rightarrow \frac{(-1,1)}{\sqrt{2}} \Rightarrow (-\frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}})$$

$$(-\frac{1}{\sqrt{2}}, -\frac{1}{\sqrt{2}})$$

$$L_3 \frac{i-k}{|i-k|} \Rightarrow \frac{(0,-1)}{1} \Rightarrow (0,-1)$$

$$(1,0)$$

#3 Find C

$$C = -Ax - By$$

$$C_1 = 0 \cdot 1 - 1 \cdot 1 = -1 \Rightarrow 0x + 1y - 1 = 0$$

$$C_2 = \frac{1}{\sqrt{2}} \cdot 2 + \frac{1}{\sqrt{2}} = \frac{3}{\sqrt{2}} \Rightarrow -\frac{1}{\sqrt{2}}x - \frac{1}{\sqrt{2}}y + \frac{3}{\sqrt{2}} = 0$$

$$C_3 = -1 \cdot 1 + 0 \cdot 2 = -1 \Rightarrow 1x + 0y - 1 = 0$$

# Plug in the point  $(1.2, 1.7)$

$$0 \cdot 1.2 + 1 \cdot 1.7 - 1 = .7$$

$$-\frac{1.2}{\sqrt{2}} - \frac{1.7}{\sqrt{2}} + \frac{3}{\sqrt{2}} = \frac{.1}{\sqrt{2}}$$

$$1 \cdot 1.2 + 0 \cdot 1.7 - 1 = .2$$



Point is  
inside