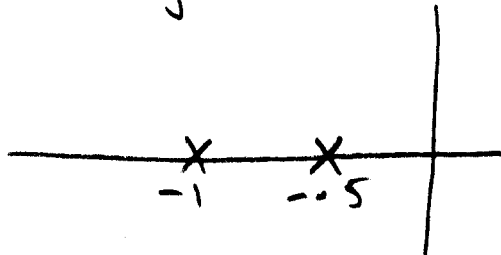


## QUIZ 10 - KEY

It is desired that the points  $-3 \pm 2j$  be on the following locus



(a)

We can place a zero so that

$$\sum \angle \text{'s from } f_1 - \sum \angle \text{'s from } f_2 = 180$$

$$\angle \text{ from } -1 \text{ is } 180 - \tan^{-1}(2/2) = 135^\circ$$

$$\angle \text{ from } -0.5 \text{ is } 180 - \tan^{-1}(2/2.5) = 141^\circ$$

$$\therefore \angle \text{ from } z = 96.34^\circ$$

$$z \text{ must be at } \underline{-2.78}$$

(b) The new locus looks like

