Example, continued

$$\text{Root locus} = \left\{ -\frac{1}{2} \pm \frac{\sqrt{1-4K}}{2} \ : 0 \le K < \infty \right\} \subset \mathbb{C}$$

Let's plot it in the s-plane:

- start at $K = 0$ the roots are $-\frac{1}{2} \pm \frac{1}{2} \equiv -1, 0$
  note: these are poles of L (open-loop poles)