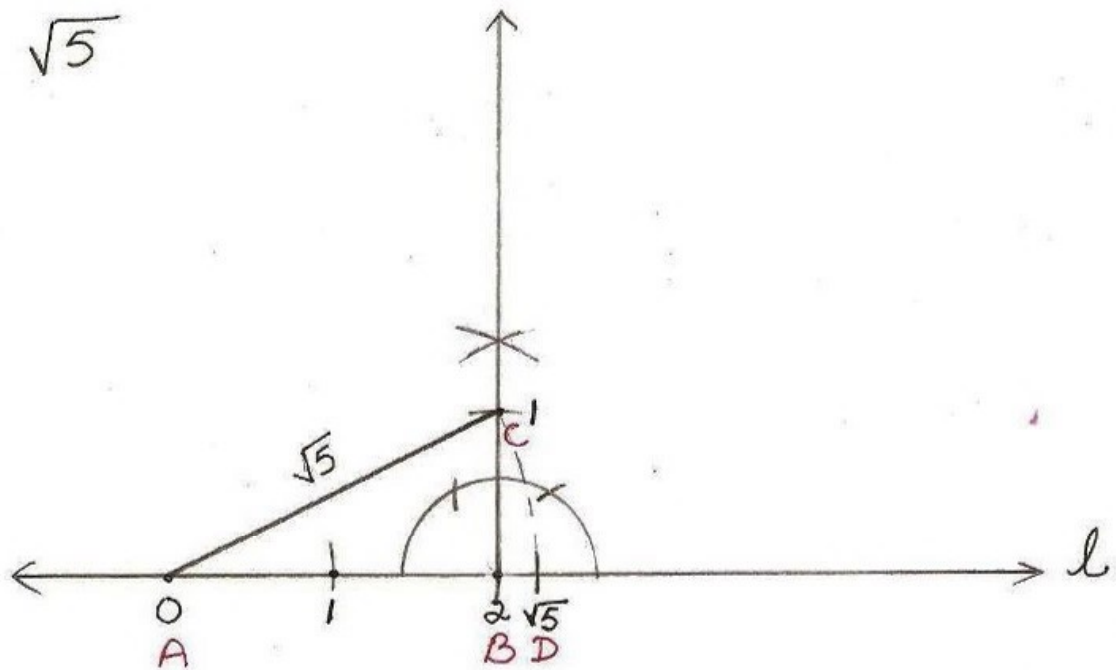


3.

$\sqrt{5}$



$$AD = \sqrt{5}$$

Proof

In rt. ΔABC

$$AC^2 = AB^2 + BC^2 \quad (\text{pythagoras theorem})$$

$$= 2^2 + 1^2$$

$$= 4 + 1$$

$$= 5$$

$$\Rightarrow AC = \sqrt{5}$$

$$AD = AC = \sqrt{5}$$