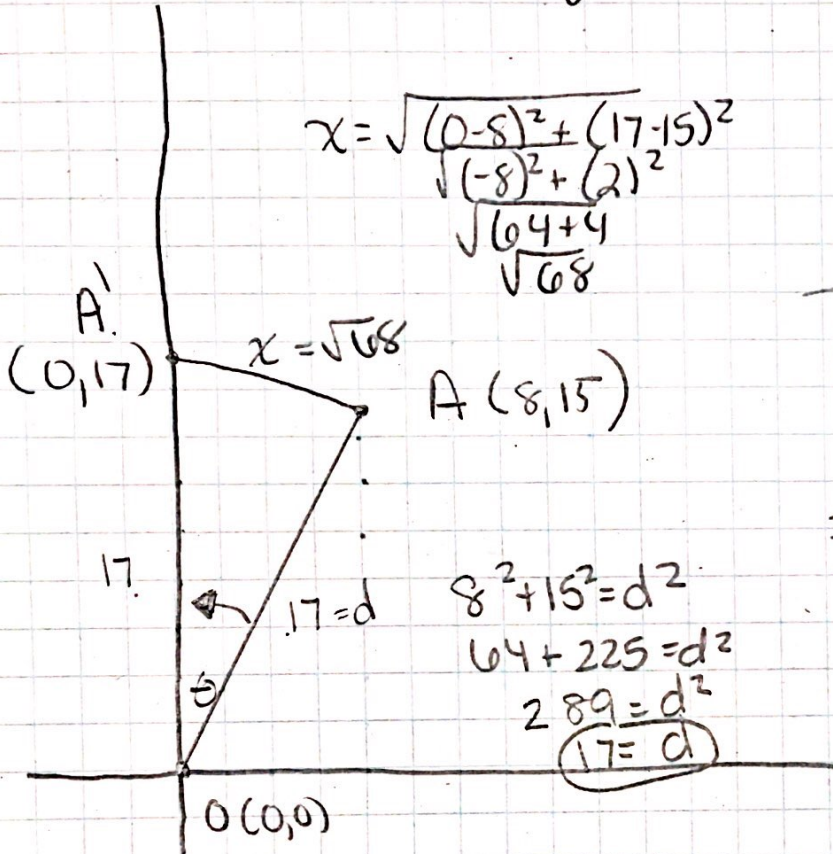


Challenge Problems Key

① Find the angle of rotation of A (8, 15) to A' (0, 17) about the origin. Round to nearest hundredth.



Law of Cosines

$$(\sqrt{68})^2 = 17^2 + 17^2 - 2(17)(17)\cos\theta$$

$$68 = 289 + 289 - 578 \cos\theta$$

$$\frac{68 - 578}{-578} = \frac{-578 \cos\theta}{-578}$$

$$\frac{-510}{-578} = \cos\theta$$

$$\frac{510}{578} = \cos\theta$$

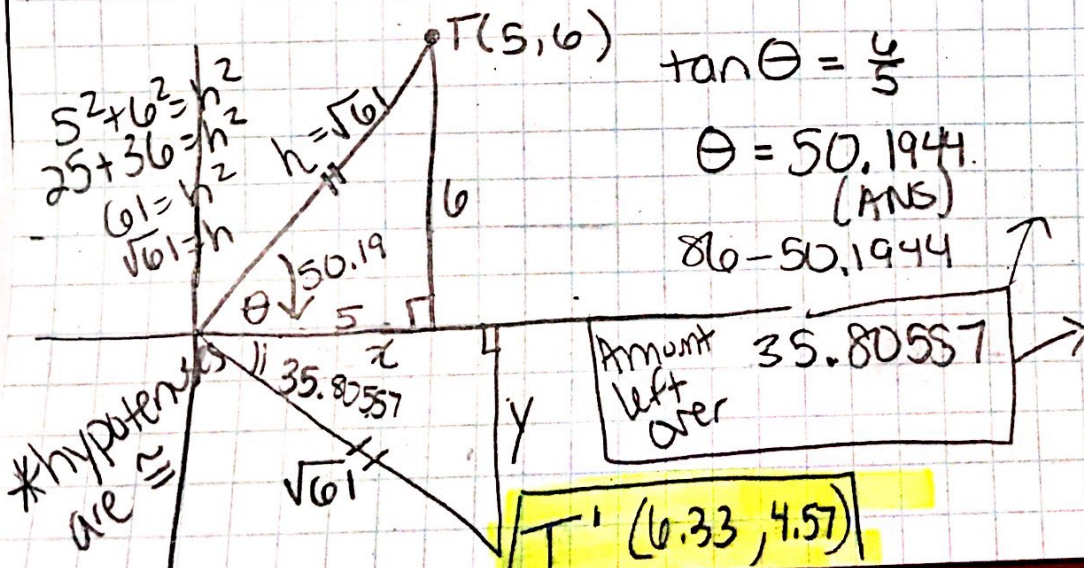
$$\theta = \cos^{-1}\left(\frac{510}{578}\right)$$

$$\theta = 28.07^\circ$$

Counter clockwise

Count by 25

② What is the image after T(5, 6) was rotated 86° clockwise about the origin. Round to the nearest hundredth.



ANS

$$\cos(35.80557) = \frac{x}{\sqrt{61}}$$

$$\sqrt{61} \cos(35.80557) = x$$

$$6.33 = x$$

ANS

$$\sin(35.80557) = \frac{y}{\sqrt{61}}$$

$$\sqrt{61} \sin(35.80557) = y$$

$$4.57 = y$$