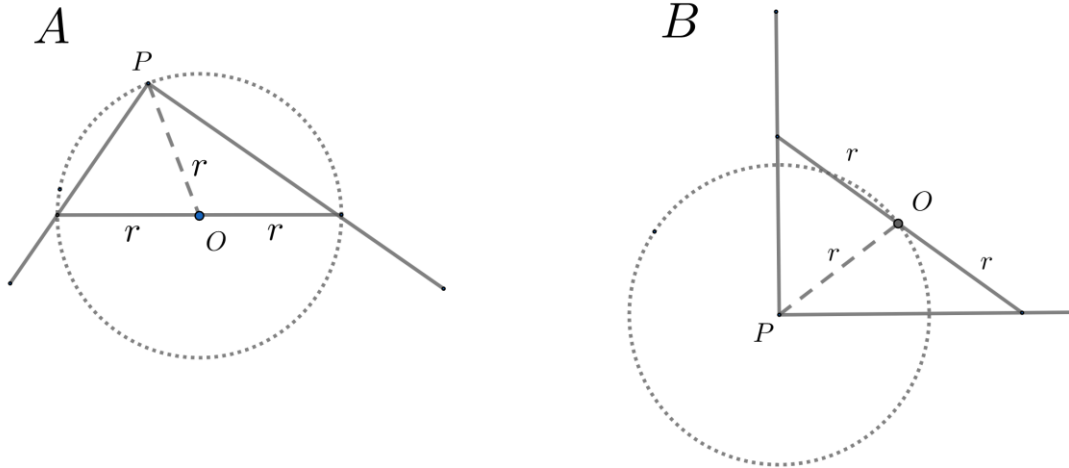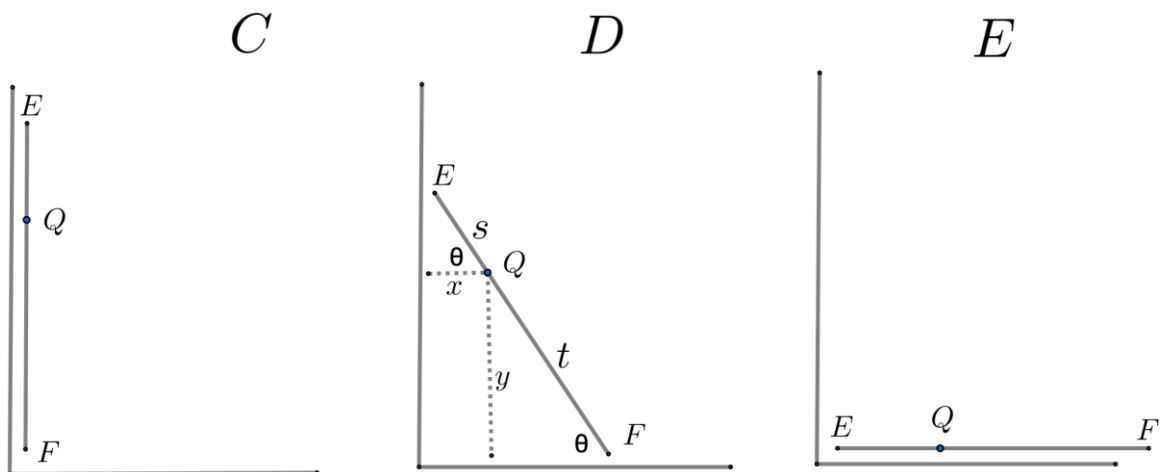## 2.2 The trammel of Archimedes

A is the same figure shown for **The orthoptic circle**. The line through *O* is fixed and we slide the frame around it. *P* follows a circle, radius *r*, centre *O*. What happens if we fix the frame and slide the line? Correct. *O* follows a circle, radius *r*, centre *P*.

Now look at *C*. What will happen to the off-centre point Q? We can see that the end-points *E*, *F* will follow straight lines. *Use the labels in D to form an equation using the fact that* $cos\theta^2 + sin\theta^2 = 1$ *and confirm that the locus is a quarter of an ellipse.*

The trammel of Archimedes is a linkage based on this diagram used to draw ellipses before the digital age.