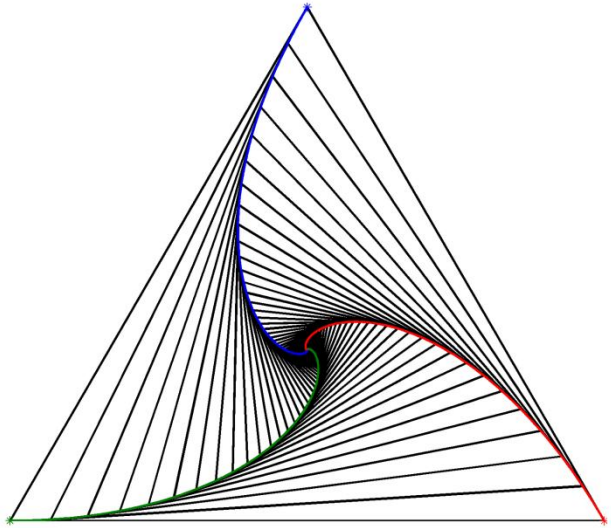
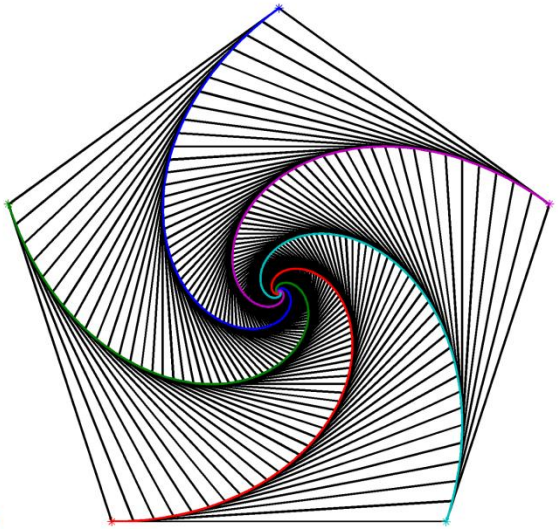
Snails of pursuit around a 3-gon.
T=8mins, v=5cm/min, s=60cm.



(a)

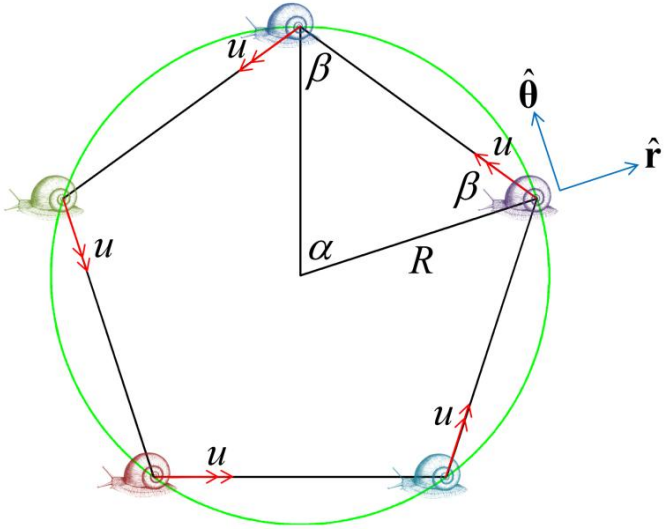
Snails of pursuit around a 5-gon.
T=17.4mins, v=5cm/min, s=60cm.



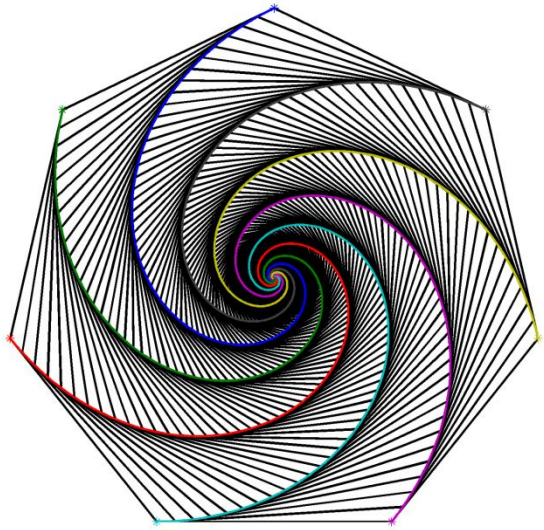
(b)

$$2\beta+\alpha=180^{\circ}\quad 5\alpha=360^{\circ}$$

$$\therefore \beta=\tfrac{1}{2}\left(180^{\circ}-\tfrac{1}{5}360^{\circ}\right)=54^{\circ}$$

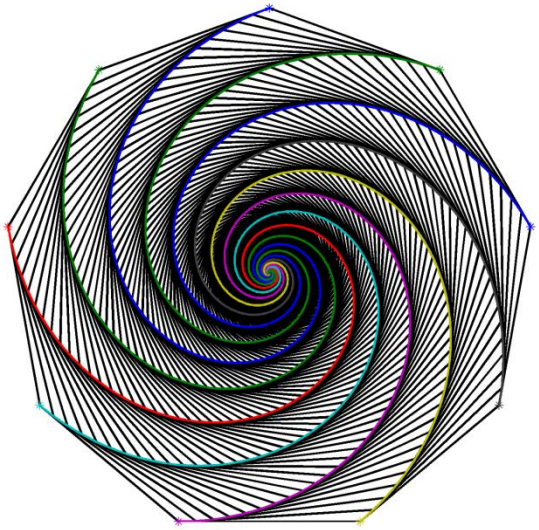


Snails of pursuit around a 7-gon.
T=31.9mins, v=5cm/min, s=60cm.

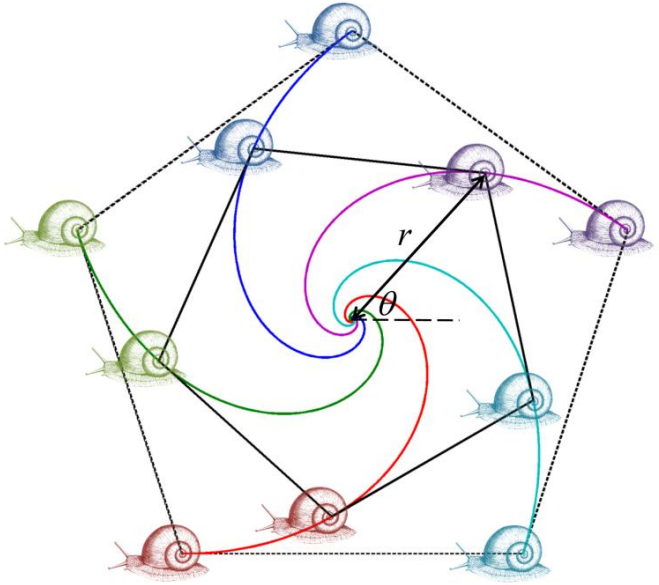


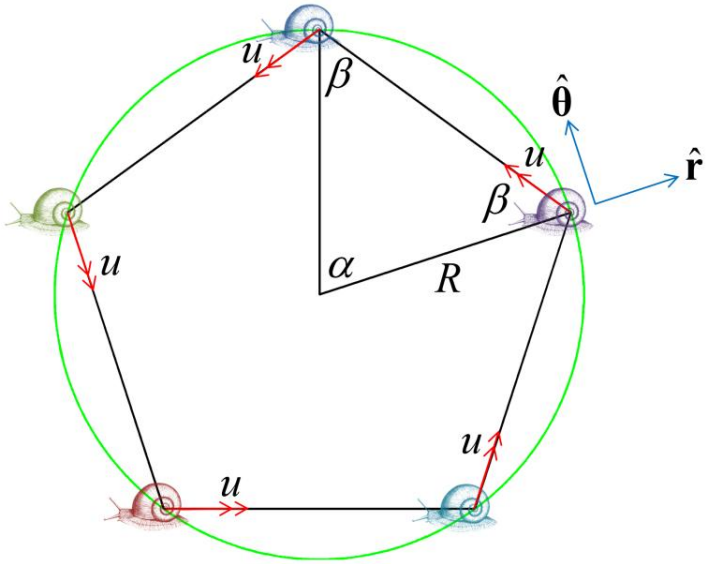
(c)

Snails of pursuit around a 9-gon.
T=51.3mins, v=5cm/min, s=60cm.



(d)





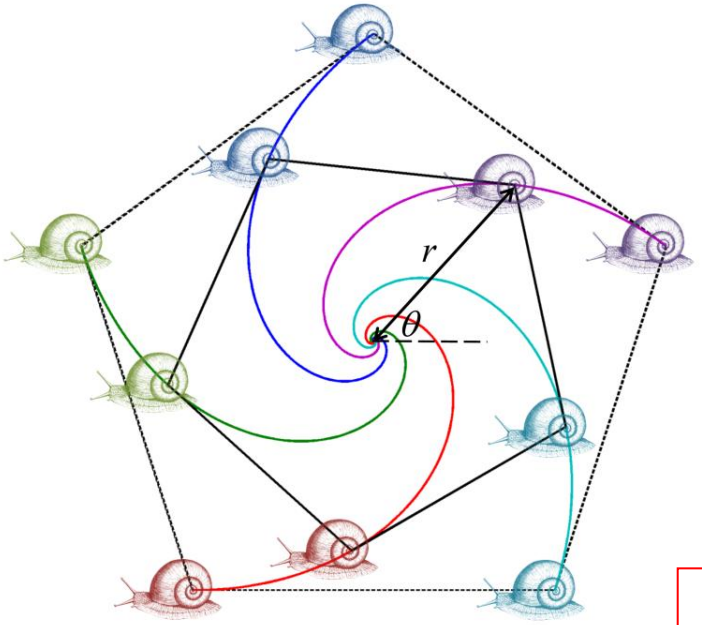
$$\mathbf{v} = -u\cos\beta\hat{\mathbf{r}} + u\sin\beta\hat{\boldsymbol{\theta}}$$

$$\dot{r} = -u\cos\beta$$

$$r\dot{\theta} = u\sin\beta$$

$$T = \frac{R}{u\cos\beta}$$

$$r(t) = R - ut\cos\beta$$



$$\dot{\theta}(t) = \frac{u\sin\beta}{R - ut\cos\beta}$$

$$\theta(t) = \theta_0 + \ln\left(\frac{R}{R - ut\cos\beta}\right)\tan\beta$$

$$\theta = \theta_0 + \ln\left(\frac{R}{r}\right)\tan\beta$$

$2\beta + \alpha = 180^\circ \quad 5\alpha = 360^\circ$

$\therefore \beta = \frac{1}{2}\left(180^\circ - \frac{1}{5}360^\circ\right) = 54^\circ$