







WEEKLY HOME STUDY PACKAGE - WEEK 2 (12/07/21 – 16/07/21)

Subject	TECHNICAL DRAWING	Year/Level	13
Strand	1 – Geometry		
Sub-strand	1.3 – Rolling wheels		
Content Learning Outcome	<ul style="list-style-type: none"> Define different types of rolling wheels and state their applications. Identify the rolling wheel and the base line or arc. Differentiate between different types of rolling wheels. Construct and draw different types of rolling wheels.		

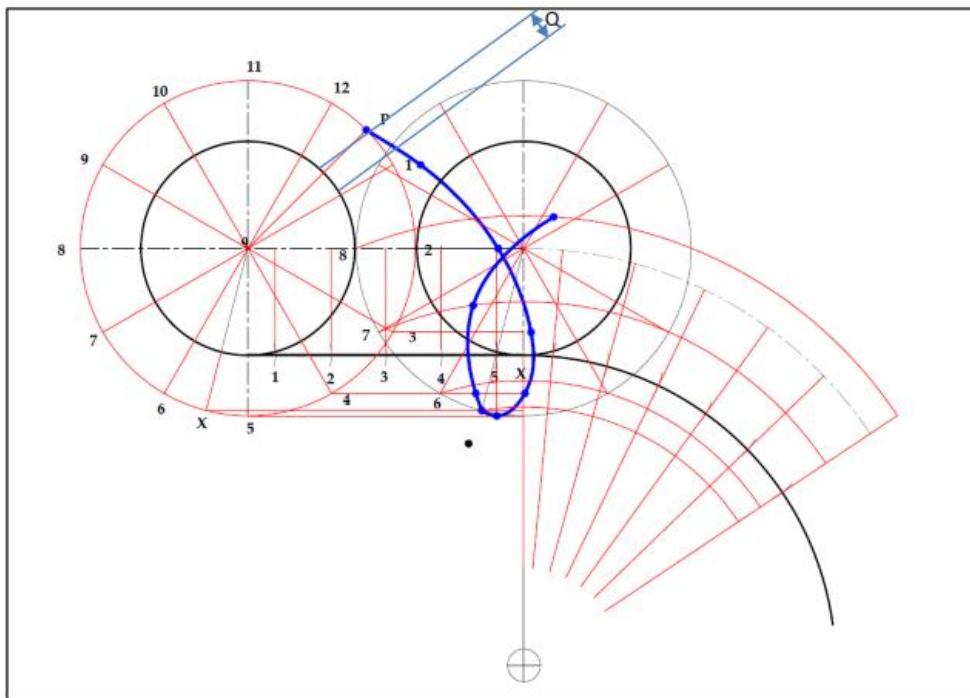
LESSON NOTES/ACTIVITY

Notes

Roulettes are curves generated by the rolling contact of one curve or line on another curve or line. There are various types of roulettes. The most common types of roulettes used in engineering practice are: Cycloids, Trochoids, and Involutes. Assume a wheel is rolling along a surface without slipping. Trace the locus of a point on the wheel. Depending on the position of the point and the geometry of the surface on which the wheel rolls, different curves are obtained.

STEPS

1. Divide the **P** circle into 12 parts.
2. Take the distance **Q** and mark **1** on the base line.
3. Use $1/12$ of the generating circle to mark on the base arc. Draw lines from the centre of the base arc to all points on the base arc.
4. Extend the lines from the centre of the base arc to the centre arc to locate centres. Set the compass to the radius of the **P** circle and with centers, inscribe arcs on the arcs drawn from each point of the generating circle in its rolling direction.



Question

(10 Marks)

Given: A rolling wheel W, point P is inside the rolling wheel, rotating direction R and combination of flat and circular base K.

Required: Draw the locus of point P as the rolling wheel rolls for $\frac{1}{2}$ revolution.

