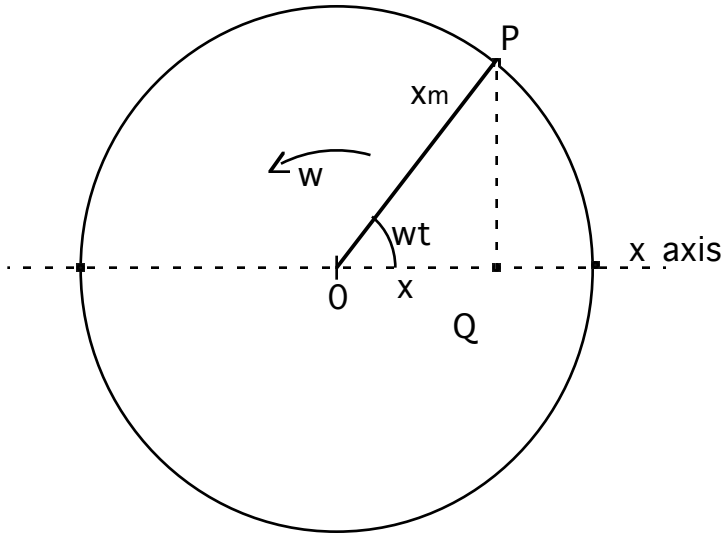
ATTACHMENT #1

Point P moves with constant speed vp on the circumference of a circle. Point Q moves such that x coordinates are equal. The motion of pont Q on the diameter is defined as SHM.



NOTES:

1. The radius of the circle is x_m, the maximum value of x, which is called the 'amplitude' of the motion.
2. The radius line follows P around the circle, rotating one complete circle of 2π radians in a time of one period, T.
3. The constant angular velocity of the radius is $w = 2\pi/T$.
4. In the above circle, if time begins when point Q is at x_m, the angle between the base x and the hypotenuse x_m is wt as shown.