

ORBITING THE SUN

What affects the time it takes for a planet (satellite) to orbit the sun? This time is defined as the period of revolution, or the **orbital period**. Let's take a look at the data for the known planets in the solar system to answer this question.

Planetary Physical Data

Planet	Mercury	Venus	Earth	Mars	Jupiter	Saturn	Uranus	Neptune	Pluto
Mean Distance from the Sun (AU)	0.39	0.72	1	1.52	5.20	9.54	19.19	30.06	39.48
Orbital Period (earth years)	0.24	0.62	1	1.88	11.86	29.46	84.01	164.79	248.54
Average Orbital Velocity (km/sec)	47.89	35.04	29.79	24.14	13.06	9.64	6.81	5.43	4.74
Mass of planet (Earth=1)	0.06	0.82	1	0.11	317.89	95.18	14.53	17.14	0.002

Note: One (1) astronomical unit (AU) is equal to the distance between the sun and the earth (1.5×10^8 km)

Questions

1. How much further is Pluto from the sun than it is from the earth?
2. Does the orbital period depend on the planet's distance from the sun (**orbital radius**)? How?
3. Does the **orbital velocity** depend on the planet's orbital radius? How?

