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INTD 290: NUMBER SYSTEM pre-Columbian Context

4 THE BASICS: CIRCULAR AND ELLIPTICAL ORBITS

④ a. distance from star to path of planet on the RIGHT → 91127 thousand miles

b. distance from star to path of planet on the LEFT → 94822 thousand miles

* Both distances are not equivalent

5 ⑤ If the Earth's orbit was perfectly circular that would convey that the Earth would not only carry the same numerical radius throughout it's orbital period, but now Kepler's third law proves its orbit to equal the constant 7.60 acknowledging ~~a circular orbit~~ its radius to remain constant of 1 AU and its period to remain at 366.25 days.

5 GRAVITY

② If I deactivate gravity the path of the planet will no longer remain in an orbit but will instead drift off away from the star.

③ If I leave the force of gravity activated but drag the planet farther from the star the planet will still remain in orbit but at a much slower pace, the circumferance will increase and it's orbit will develop an oval shape.

④ If I let the planet follow one orbit with it's normal velocity its orbit would remain in a proportionate range at a moderate speed. However, when I extend the velocity arrow the planet's orbit dramatically changes the radius at all points of its orbit along with slowing down its speed of its orbital period. The velocity also influences its Gravitational force as well, where it grows stronger at one point but

remains weaker throughout the majority of its orbit.

6 KEPLER'S LAWS

② When I decrease the mass of the planet the gravitational force between the star and the planet decreases whereas when I increase the mass of the planet the gravitational force between the star and mass increases.

→ The rate at which someting accelerates downward due to gravity here on Earth definitely depends on mass as a factor. As justified through NEWTON's law of motion acceleration is equal to force divided by mass.

→ For planets, the mass of a planet does not affect its acceleration in its orbit. According to Newton's law of Gravity the various masses of planets will not affect it's orbital speed, only its gravitational force.

③ when adjusting the orbit so that it is eliptical it is clear that the motion definitely varies from one point on the eliptical than the other. Although it looks as though acceleration is greater when it is closer to the star than further due to its gravitational force the planet sweeps out equal areas in equal times. This is true because both triangular areas account for different radius lengths with different gravitational forces making them account for ~~dif~~ equal areas at equal times justified through kepler's second law.