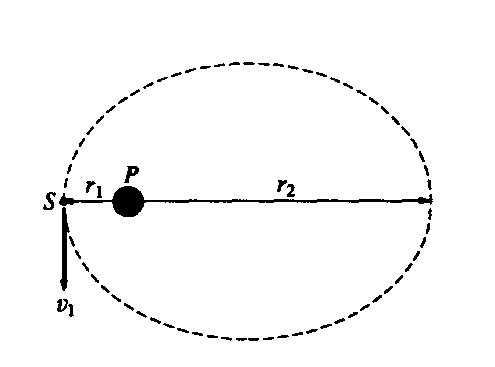
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**AP Physics 1: Angular Momentum Quiz**

1. Assuming that a planet has an elliptical orbit, explain why it would move faster the closer it is to the sun and slower the farther it is from the sun.
2. A satellite S is in an elliptical orbit around a planet P, as shown to the right, with r1 and r2 being its closest and farthest distances, respectively, from the center of the planet. If the satellite has a speed v1 at its closest distance, what is its speed at its farthest distance?
3. A child runs and jumps onto a merry-go-round that is initially at rest. Describe what happens to the child-merry-go-round system. If the child has a mass of 25 kg and runs at 3 m/s, what is the final angular velocity of the merry go round if it has a radius of 1.5 m. (Assume the moment of inertia of the merry go round is that of a solid disk, *I= ½ mr2*.)