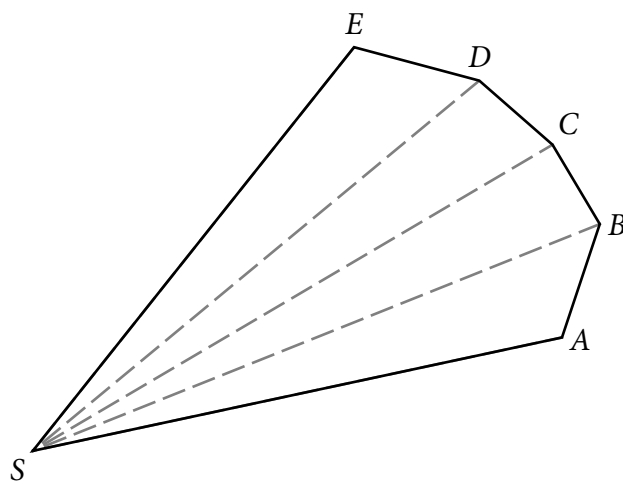


Imagine body moving under the influence of a central force at the point S . The body starts at A and continues to B , C , and so forth. These points are spaced equally in time (i.e. the time to travel from A to B is the same as the time to travel from B to C .) Rather than thinking of the force acting continuously, along the orbit, it acts instantaneously at each of the points A , B , etc. You do not know how much force acts, but you do know that it always acts in the direction of S .



1. Suppose the force at B failed to act. The body would then end up at a point \hat{C} rather than C . Use your compass and straight edge to construct the point \hat{C} .
2. Why do $\triangle SAB$ and $\triangle SBC$ have the same area?
3. Use your compass and straight edge to construct the line through \hat{C} parallel to SB .
4. Explain what this line has to do with C and why.
5. Why do $\triangle SBC$ and $\triangle S\hat{B}C$ have the same area?
6. Conclude that $\triangle SAB$ and $\triangle SBC$ have the same area.
7. Were the forces acting at C and at D in the direction of S ? Why or why not?

