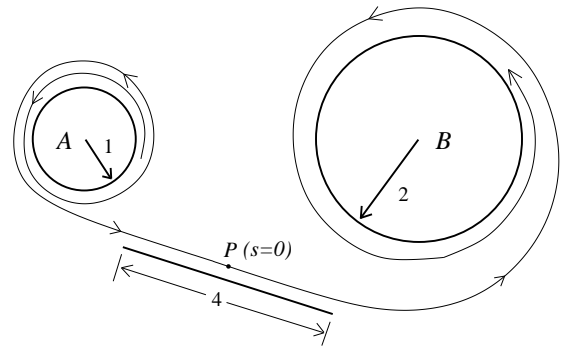


Problem statement A point is moving along the curve displayed in the direction indicated. Its motion is parameterized by arc length, s , so it is moving at unit speed. Arc length is measured from the point P (both backward and forward). The curve is intended to continue indefinitely both forward and backward in s , with its forward motion curling more and more tightly around the indicated circle, B , and, backward, curling more and more tightly around the other circle, A . Near P the curve is parallel to the line segment shown near P . Sketch a graph of the curvature, κ , as a function of the arc length, s . What are $\lim_{s \rightarrow +\infty} \kappa(s)$ and $\lim_{s \rightarrow -\infty} \kappa(s)$? Use complete English sentences to explain your graph and the numbers given.



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