2019 Q6

6. A spherical balloon of radius \( r \) cm, \( r > 0 \), deflates at a constant rate of 60 cm\(^3\) s\(^{-1}\).

Calculate the rate of change of the radius with respect to time when \( r = 3 \).

\[
\text{The volume of a sphere is given by } V = \frac{4}{3} \pi r^3.
\]

\[
\text{Rate of Change } = \frac{-5}{3\pi} \text{ cms}^{-1}
\]