\[ r(t) = \langle t^3, 5t, t^2 - 16t \rangle \]

\[ r' = \langle 2t, 5, 2t - 16 \rangle \]

\[
\text{Speed} = |r'| = \left( 4t^2 + 25 + (2t-16)^2 \right)^{\frac{1}{2}} = s(t)
\]

so find \( s(t) \) and set = 0

check with \( s''(t) \) to tell if max or min.
if $|r'|$ is constant, show $\forall z \in \mathbb{R}$

given that $|r'| = C$, we know from B.3 that if $|s| = C$
then $s \perp s'$. So for us, since $|r'| = C$
we have $r' \perp (r')'$

Thus $\forall a$
\[ r(t) = \langle 3 + t, 2 + \ln(t), 7 - \frac{1}{t^2 + 1} \rangle \]

Space station at \((6, 4, 9)\)

When do we cut the engines so we can coast into the station?
\[ \vec{A} = m \vec{B} \]
14.2

1. \( \lim_{(x,y) \to (a,b)} f(x,y) = L \iff \forall \varepsilon > 0 \exists \delta > 0 \forall (x,y) \in D : |(x,y) - (a,b)| < \delta \Rightarrow |f(x,y) - L| < \varepsilon \).
\iffalse\textbf{if and only if}\fi

\[
\forall A \exists \exists \Rightarrow \exists \text{ such that}
\]