

Problem 3.1.29

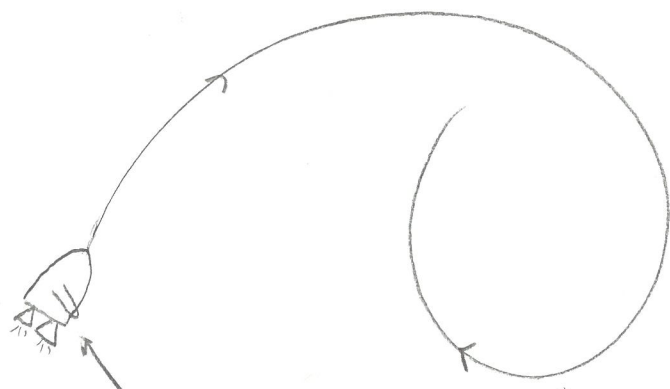
Big Q: does the rocket ship's
tangent line path go to
the space station?

location of space
station
(7e4, 35, 5)

rocket now follows
path determined
by it's
tangent line

Rocket's engines die
at $t = 2$.

space
station
(I didn't
even try
to draw
it.)



rocket.
(I know, I
couldn't figure
out how to
draw it.)

path of rocket
given by

$$\vec{x}(t) = (e^{2t}, 3t^3 - 2t, t - \frac{1}{t})$$

Note: don't worry
about whether
the ship slows
to a stop at
the station.
(It won't; no
friction. But
the space
station has
nets to catch
it.)