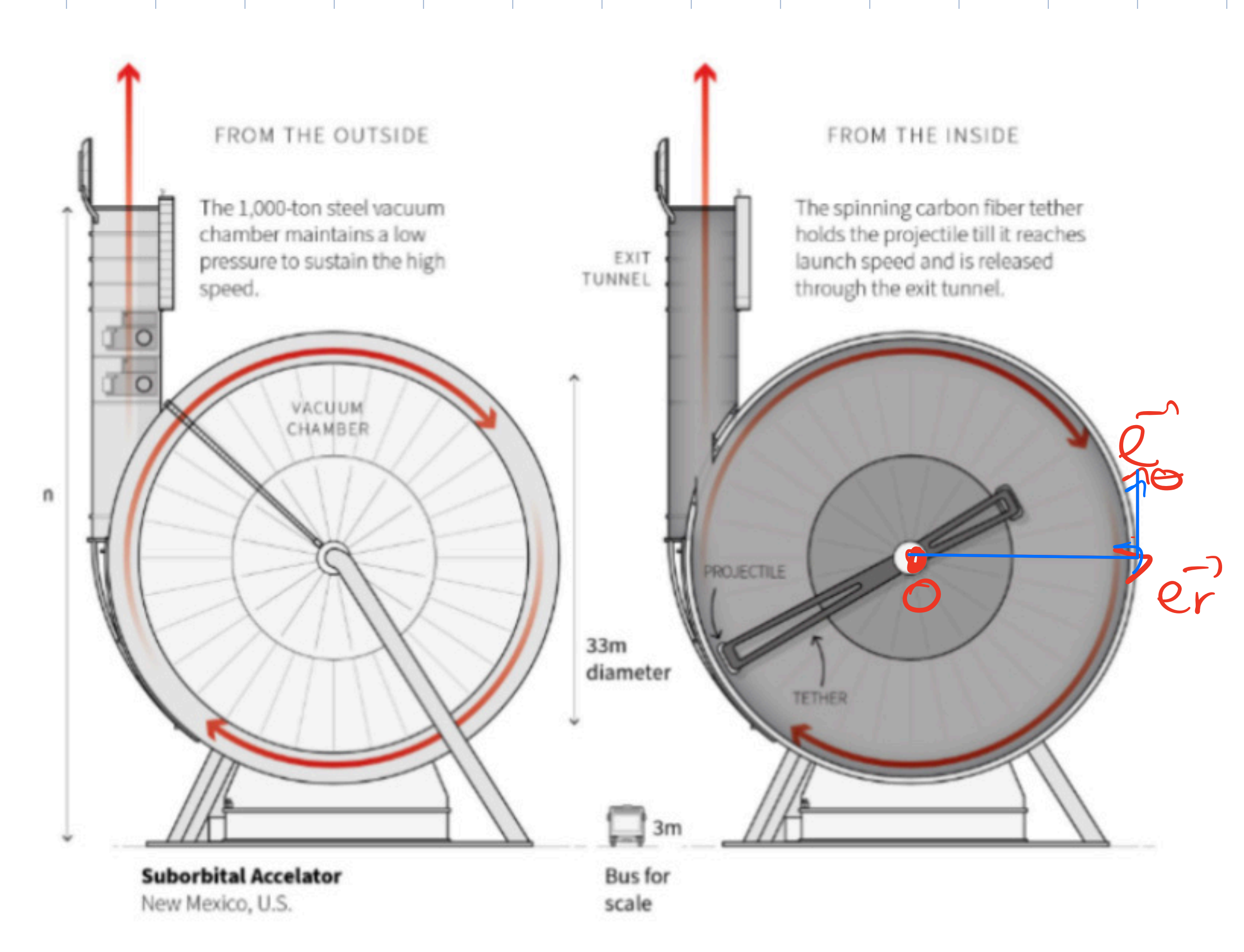

1 ✓

2 ✓

1 $\vec{a} = \dfrac{d\vec{v}}{\ }$

$a_n = -l\dot{\theta}^2$

$\dot{\theta}$

dt $\qquad a_t = \rho\theta$

$\vec{v} = l\dot{\theta}\,\vec{e_\theta}$ car l constant

$(t\dot{\theta} = \ddot{\theta})$ en intégrant

$\boxed{= \ddot{\theta}\, t\, l.}$

(2) $v = \ddot{\theta}\, t\, l$

on primitive

$\ddot{\theta} = a_i$

$\dot{\theta} = a_i t + \dot{\theta}(0)$

$\theta = \frac{1}{2} a_i t + \dot{\theta}(0) + \theta(0)$

$\boxed{= \frac{1}{2}\ddot{\theta}\, t}$

(3) $\boxed{v = \ddot{\theta}\, t\, l}$

$$\Theta = \frac{1}{2}\ddot{\Theta}t^2$$

$$\Leftrightarrow \ddot{\Theta} = \frac{2\Theta}{t^2} \qquad \underline{m \cdot s}$$

$$t = \frac{v}{\ddot{\Theta} \times l}$$

$$\Theta = \frac{1}{2}\ddot{\Theta}\left(\frac{v}{\ddot{\Theta} l}\right)^2$$

$$= \frac{v^2}{2 l^2 \ddot{\Theta}} \qquad \frac{(\cancel{m} \cdot \cancel{s^{-1}})^2}{\cancel{m^2} \cdot rad \cdot \cancel{s^{-2}}}$$

$$= \frac{2000^2}{2(45)^2 10}$$

$$= \underline{98\ rad.}$$

$$a = -l\dot{\Theta}^2 + l\ddot{\Theta}$$

$(rad \cdot s^{-1})^2$

$= m \cdot (rad^2 \cdot s^{-2}) + m \cdot rad \cdot s^{-2}$

$m \left(\frac{- rad^2 + \dot{r}ad}{s^{-2}} \right)$

$a = -l\dot{\theta}^2 + l\ddot{\theta}$

$\dot{\theta}_{max} = a_i \times t_f$

$\ddot{\theta}_{max} = a_i$ $\qquad a_l = a_{ang} \times r$

$a =$ $\qquad a = 45 \times 10$

$= 450 \; m \cdot s^{-2}$

$$\begin{cases} a_n = \cancel{\ddot{\ell}} - l\dot{\theta}^2 \\ a_t = \underbrace{l\ddot{\theta}}_{} \cancel{+ 2\dot{l}\dot{\theta}} \end{cases}$$

$-l\dot{\theta}^2$ $\qquad \dot{\theta}_{max} = t \times a_i \quad \frac{40}{9}$

$= t \times \ddot{\theta}$

$$a = \sqrt{(-l\dot{\theta}^2)^2 + (l\ddot{\theta})^2}$$

$$= \sqrt{(a_n)^2 + (a_t)^2}$$

$$\sqrt{\left(-45\left(\frac{40}{g} \times -\theta\right)^2\right)^2 + \left(-\theta \times 4.5\right)^2}$$