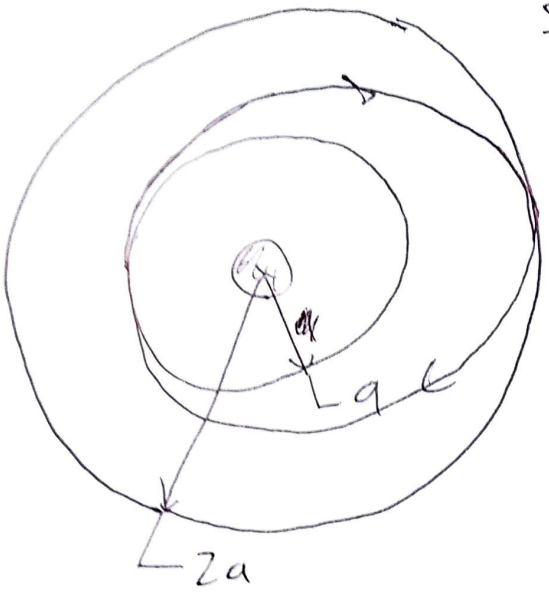
2014 Phys BPZQ2



SEMI-MAJOR AXIS: $\frac{a+2a}{2} = \frac{3}{2}a$

USING CD SLIDES:

$T = \frac{2\pi}{\omega} = \frac{2\pi}{\sqrt{\frac{A}{m\left(\frac{3}{2}a\right)^3}}}$ (TRANSFER)

$= 2\pi\sqrt{\frac{ma^3}{A}}$

$= 2\pi\sqrt{\frac{m\left(\frac{3}{2}a\right)^3}{A}}$

$T_{GEOSTAC} = 2\pi\sqrt{\frac{ma^3}{A}}$

$\frac{T_{TRANSFER}}{T_{GEOSTAC}} = \frac{2\pi\sqrt{\frac{m\left(\frac{3}{2}a\right)^3}{A}}}{2\pi\sqrt{\frac{ma^3}{A}}} = \sqrt{\left(\frac{3}{2}\right)^3} = 1.84$ DAYS

How long it takes $= \frac{T_{GEOSTAC}}{2} \simeq 0.92$ DAYS