

How can a phasing manoeuvre can be conducted?

- A By making a Hohmann transfer 0
- B By solving Lambert's problem 0
- C By going to an orbit with a non-zero catch-up rate 0
- D By going to an orbit with a zero catch-up rate 0

What is the correct equation for approximate the catch-up between two objects on coplanar orbits?

A

.

$$\Delta r = 3.5 \Delta v$$

0

B

.

$$\Delta x = 3 \pi (r_{TGT} - a_{chaser})$$

0



C

The equation for the 1st burn in a Hohmann transfer

0

D

I have to solve Lambert's problem

0

You are in a spacecraft at the same altitude as the ISS, but 20 km behind. What should you do to catch up with it in 1 orbit?

- A Go to an elliptical orbit, with a SMA about 2 km above 0
- B Go to an elliptical orbit, with a SMA 2 km below 0
- C Go to an elliptical orbit, with a SMA 7 km above 0
- D Go to an elliptical orbit, with a SMA 7 km above 0
- E Can't be done! 0

What would be the total Δv needed to conduct the rendezvous from 20 km behind the ISS? (You have to go to an elliptical orbit with a SMA 2 km below)

(Hint: remember the LEO approximation, $\Delta r = 3.5\Delta v$)

A $\Delta v \sim 1.1$ m/s

0

B $\Delta v \sim 0.6$ m/s

0

C $\Delta v \sim 7.0$ m/s

0

D $\Delta v \sim 0.3$ m/s

0

You are in a spacecraft at the same altitude as the ISS, but 20 km behind. What happens if you increase the energy of your orbit by conducting one posigrade burn?

- | | | |
|---|--|---------------------------------------|
| A | The final orbit will circular | 0 |
| B | You will catch-up with the ISS | 0 |
| C | You will fall behind the ISS | 0 <input checked="" type="checkbox"/> |
| D | The final orbit's period will be shorter | 0 |

You are an astronaut conducting an EVA to work on the station's solar panel. At some point you lose a tool by accident. It floats away from you towards the center of the Earth. What is the trajectory of that object relative to the ISS?

- | | | |
|---|--|---------------------------------------|
| A | It will start trailing behind at a constant rate from the ISS | 0 |
| B | It will start moving in front of the ISS at a constant rate | 0 |
| C | It will make an orbit around the ISS and potentially hit the station 15 ISS-orbits later | 0 |
| D | It will make an orbit around the ISS and potentially hit the station 1 ISS-orbits later | 0 <input checked="" type="checkbox"/> |

What is the typical chaser configuration with respect to the target before starting a rendezvous?

- A Below and behind 0
- B Below and ahead 0
- C Above and behind 0
- D On orbits with different inclinations 0

What does LVLH mean?

A A geocentric non-inertial frame 0

B A Local Vertical Local Horizontal comoving reference frame 0

C Louis Vuitton Moët Hennessy 0

D A helocentric inertial frame 0

What are debris-generating events?

- A The process of removing non-operational satellites from orbit 0
- B A process that add inert pieces on orbit 0
- C E.g. a satellite re-entry 0
- D E.g. a rocket fragmentation 0
- E E.g. a satellite collision 0