

The space shuttle has deployed a 20 km-long tether. At the end, there is a relatively light satellite. The shuttle is at the bottom end and the satellite at the top.

The tether is cut. What happens?

- | | | | |
|---|---|---|---|
| A | Nothing, the satellite and space shuttle stay at their pre-cut altitude | 0 | ✗ |
| B | The satellite climbs significantly | 0 | ✓ |
| C | The shuttle climbs significantly | 0 | ✗ |
| D | The shuttle lowers its altitude significantly | 0 | ✗ |
| E | The shuttle lowers its altitude slightly | 0 | ✓ |

What's a rideshare launch?

- | | | | |
|---|---|---|---|
| A | A rocket that deploys a few satellites into very well defined orbits | 0 | ✗ |
| B | A rocket that deploys tens to hundred satellites into a defined injection orbit | 0 | ✓ |
| C | A rocket that injects satellites into different orbits (there are multiple injection/manoeuvre sequences) | 0 | ✗ |

What are example of old space?

A The Starlink constellation

0 ✕

B The Hubble Space Telescope

0 ✓

C The ISS

0 ✓

D The James Webb Space Telescope

0 ✓

E Umbra - A private radar observation constellation

0 ✕

What is a satellite constellation?

- | | | | |
|---|---|---|---|
| A | A group of satellites working together | 0 | ✓ |
| B | A group of satellites that appear just like astronomical constellation in the night sky | 0 | ✗ |
| C | A group of satellites made by the same manufacturer that have different missions | 0 | ✗ |
| D | A group of satellites that have the same mission, but different manufacturer, orbits and operations | 0 | ✗ |

What does street of coverage mean?

A A region devoid of coverage

0 ✕

B The region of coverage by a single satellite

0 ✕

C The number of satellites needed for continuous global coverage

0 ✕

D A region of continuous coverage by multiple satellites

0 ✓

Which statement about the Outer Space Treaty is wrong?

A The Treaty bans the use of weapons of mass destruction in space

0 ✕

B The Treaty states that space exploration should be for the benefit for all

0 ✕

C The Treaty grants territorial claims to the first arrived state

0 ✓

D The State that launches a space object retains jurisdiction and control over that object.

0 ✕

What is the probability of collision P_c ?

- A P_c is the probability that two objects will be at the same altitude and inclination 0 ✕
- B P_c is the probability that the miss distance between two objects is less than the sum of their safety-radii. 0 ✓
- C P_c is the probability that the radio emissions of 2 objects collide 0 ✕
- D P_c is the collision probability between 2 objects which cannot be computed analytically 0 ✕

What statement is wrong about a collision avoidance (COLA) manoeuvre?

A COLA aims at maximising the miss-distance

0 ✕

B COLA aims at minimising the Δv

0 ✕

C COLA occurs one to a few orbits before TCA

0 ✕

D To compute the COLA, one can assume that there is only one encounter and no other object

0 ✓