Cosmic Economics and Resource Allocation

Economics · Answer Key · 8 Questions

1. What is the primary economic classification for the extraction of resources from asteroids, such as platinum-group metals, within current international legal frameworks?

A) Common Heritage of Mankind
B) Private property under the 1967 Outer Space Treaty
C) Public domain utility
D) Sovereign state resource

2. In the context of the 'Space Economy', what does the 'Kessler Syndrome' represent in terms of long-term economic sustainability?

A) A peak in launch frequency leading to market saturation
B) The exponential increase of debris causing prohibitive insurance and operational costs
C) A market failure due to state-sponsored launch subsidies
D) The collapse of communication satellite pricing models

3. The 2015 U.S. Commercial Space Launch Competitiveness Act explicitly granted U.S. citizens the right to own, transport, and sell which of the following?

A) Extraterrestrial land plots
B) Planetary atmosphere samples
C) Space-derived resources including water and minerals
D) Geostationary orbital slots

4. Which economic metric is used by space agencies to define the cost-effectiveness of heavy-lift launch vehicles, such as the SpaceX Starship or NASA's SLS?

A) Price per kilogram to Low Earth Orbit (LEO)
B) Launch frequency volatility index
C) Research and Development amortization rate
D) Opportunity cost of payload volume

5. What is the primary economic bottleneck preventing the commercial viability of Helium-3 mining on the Moon for fusion energy production?

A) Lack of demand for helium isotopes
B) Prohibitive Earth-return delta-v and extraction energy costs
C) The Moon's status as an international protected zone
D) Lack of vacuum-rated mining machinery

6. Under the 1979 Moon Agreement, which remains unratified by major spacefaring nations, what is the mandated status of benefits derived from celestial resources?

A) Strictly private enterprise profit
B) An international regime to govern benefit-sharing
C) National monopoly for the launching state
D) Tax-exempt status for all participants

7. What economic phenomenon occurs when a small number of private firms dominate the launch service market, resulting in a lack of competitive pricing for small satellite deployment?

A) Oligopolistic market structure
B) Natural monopoly
C) Perfect competition
D) Monopsony

8. Which economic factor most significantly increased the commercial viability of LEO satellite constellations like Starlink compared to traditional geostationary satellites?

A) Reusability of launch vehicle stages
B) Decreased cost of solar panel manufacturing
C) Higher atmospheric density at altitude
D) Government-mandated terrestrial broadband subsidies