



OUT OF THIS WORLD

Laser-Sailing Starships

Have you ever dreamed of visiting a distant planet or star? Even the closest stars are so far away that a visit might seem impossible but maybe not! Read *Laser-Sailing Starships* to learn more!

What did you learn?

QUESTIONS

1. Traditional space probes are around the size of a ...
 - a. Bus
 - b. Television
 - c. Automobile
 - d. Rocket
2. The Proxima Centauri star is called a ...
 - a. Supernova
 - b. Black hole
 - c. Giant star
 - d. Red dwarf
3. The New Horizons probe reached the planet Pluto in ...
 - a. Nine years
 - b. Fifteen years
 - c. One year
 - d. Eighteen years
4. Rockets require ...
 - a. Wings
 - b. Fuel
 - c. Helium
 - d. Windows
5. What does NIAC stand for?
6. Who is this?



TRUE OR FALSE?

- | | |
|--|--|
| _____ 1. Light travels distances in an instant. | _____ 4. The first mobile phones were thin. |
| _____ 2. The nearest star to the sun is Proxima Centauri. | _____ 5. People have used sails for thousands of years. |
| _____ 3. The United States entered the space exploration era with the Venus and Viking programs. | _____ 6. Several lasers' lights combining to form one giant beam is called a phased laser array. |

ANSWERS

- 1. c. Automobile.** According to section "Introduction" on page 6, we know that "Traditional space probes are around the size of an automobile." So, the correct answer is C.
- 2. d. Red dwarf.** According to section "Destination: Proxima Centauri" on page 9, we know that "Proxima Centauri is a kind of star called a red dwarf." So, the correct answer is D.
- 3. a. Nine years.** According to section "Interstellar travel" on page 15, we know that "NASA's New Horizons probe, launched with a conventional rocket as shown here, took nine years to reach the dwarf planet Pluto." So, the correct answer is A.
- 4. b. Fuel.** According to section "Pushing faster" on page 26, we know that "But rockets are heavy and require heavy propellants (fuels)." So, the correct answer is B.
- 5.** According to page 7, NIAC stands for NASA Innovative Advanced Concepts.
- 6.** As can be seen on page 7, the illustration shows Philip Lubin.

TRUE OR FALSE? ANSWERS

- 1. True.** According to section "Introduction" on page 5, we know that "Light travels faster than anything else, seeming to cross great distances in an instant." So, the correct answer is True.
- 2. True.** According to section "Destination: Proxima Centauri" on page 8, we know that "Proxima Centauri is the nearest star to our sun." So, the correct answer is True.
- 3. False.** According to section "Inventor feature: Growing up during the space race" on page 13, we know that "The United States entered the era of piloted space exploration with the Mercury and Gemini programs." So, the correct answer is False.
- 4. False.** According to section "Big idea: Make it smaller" on page 23, we know that "The first mobile phones were simple and bulky." So, the correct answer is False.
- 5. True.** According to section "Pushing faster" on page 27, we know that "People have been using sails to move boats and ships for thousands of years." So, the correct answer is True.
- 6. True.** According to section "Laser power" on page 34, we know that "Several lasers could be made to go off together, their light combining to form one giant beam. This arrangement is called a phased laser array." So, the correct answer is True.