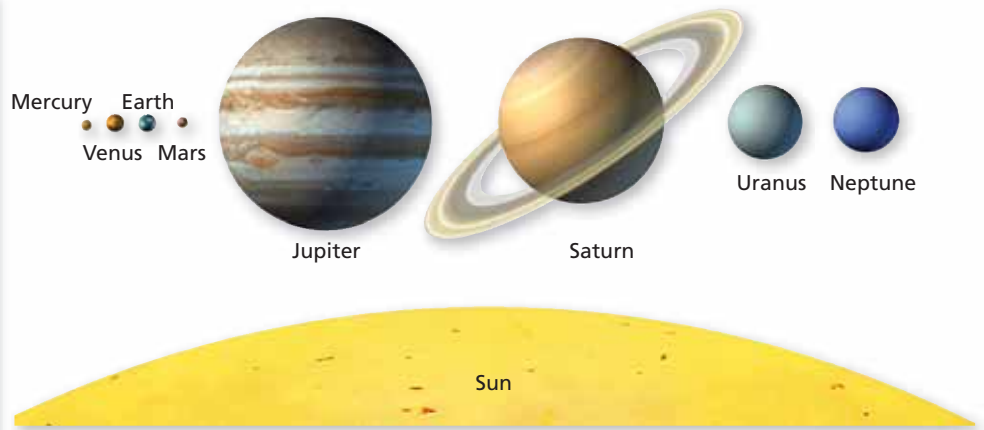


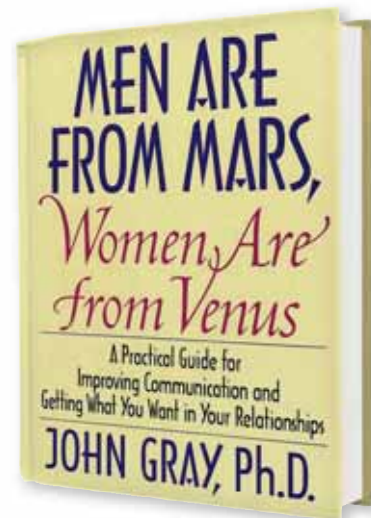
Solar System In Exercises 13–16, use the table. The speed of light is 299,792 kilometers per second. (See Examples 5 and 6.)

Planet	Mean Distance from the Sun (km)
Mercury	57,909,175
Venus	108,208,930
Earth	149,597,890
Mars	227,936,640
Jupiter	778,412,020
Saturn	1,426,725,400
Uranus	2,870,972,200
Neptune	4,498,252,900



Saturn is the only planet in our Solar System that is less dense than water. It would float in a bathtub if you could build a bathtub big enough.

- How long does it take sunlight to reach Earth?
- How long does it take sunlight to reach Neptune?
- In the book *Men Are from Mars, Women Are from Venus*, the author John Gray suggests that communication is a key component to successful relationships among couples. Data transmission through space occurs at the speed of light. How long would it take for a text message sent from Venus to reach Mars?
- A meteor streaks through Jupiter’s atmosphere, causing a bright flash. How long before the flash is seen from Earth?



- Pluto** From its discovery in 1930 to 2006, Pluto was considered our Solar System’s ninth planet. In 2006, Pluto was reclassified as a dwarf planet because of its low mass and its similarity to other dwarf planets beyond Neptune in the Kuiper Belt. To better understand Pluto, NASA planned a mission to Pluto called New Horizons. The spacecraft launched on January 19, 2006, and is supposed to reach Pluto 9.5 years (83,220 hours) later after traveling about 3 billion miles. What is the average speed of the spacecraft in miles per hour? (See Example 5.)
- Light-Year** What is a light-year? How is the term *light-year* used?