

Name \_\_\_\_\_

## The Sun Estimation Word Problems Answer Key

1. The solar panel generates approximately 120 watt-hours of electricity ( $100 \text{ watts} \times 0.20 \times 6 \text{ hours}$ ) in 6 hours of direct sunlight.
2. The beam of light travels approximately 23,333 kilometers ( $1.4 \text{ million kilometers} / 60 \text{ minutes}$ ) across the diameter of the Sun in 1 minute.
3. The solar farm receives approximately 30,000,000 watt-hours of solar radiation ( $1,000 \text{ watts/m}^2 \times 5,000 \text{ m}^2 \times 6 \text{ hours}$ ) during a 6-hour period.
4. The duration of daylight is approximately 13.5 hours (8:00 PM - 6:30 AM) in the given city.
5. The solar flare takes approximately 4 hours ( $32 \text{ million kilometers} / 8 \text{ million kilometers per hour}$ ) to travel a distance of 32 million kilometers.
6. The distance from the Sun to Pluto is approximately 6 billion kilometers ( $150 \text{ million kilometers} \times 40$ ) on average.
7. The approximate number of sunspots is 100 ( $10 \text{ sunspots} \times 10$ ) on the given day.
8. The maximum duration of a total solar eclipse is approximately 7 minutes.
9. The solar wind takes approximately 0.5 hours ( $800,000 \text{ kilometers} / 1.6 \text{ million kilometers per hour}$ ) to travel a distance of 800,000 kilometers.
10. The estimated age of the Solar System is approximately 4.6 billion years.

