

Basketball's Cosmic Connections

Basketball · Answer Key · 15 Questions

1. The diameter of a standard NBA basketball is approximately 9.5 inches. Which celestial body has a diameter closest to this measurement?

A) Pluto

- B) Mercury
- C) The Moon
- D) Mars

2. A basketball hoop's rim is 10 feet from the court floor. The escape velocity from Earth's surface is about 11.2 km/s. What is the approximate escape velocity from the surface of Jupiter?

- A) 59.5 km/s
- B) 20.1 km/s
- C) 42.1 km/s**
- D) 11.2 km/s

3. The circumference of an NBA basketball is around 29.5 inches. The circumference of Saturn's largest moon, Titan, is approximately 10,140 miles. How many miles is Titan's circumference roughly equivalent to in basketball circumferences?

- A) 1,825
- B) 3,380**
- C) 6,760
- D) 10,140

4. The gravitational acceleration on the surface of the Earth is approximately 9.8 m/s². If a basketball were dropped from the same height on the Moon, its acceleration would be roughly 1.62 m/s². What is the approximate gravitational acceleration on the surface of Venus?

- A) 10.44 m/s²
- B) 1.62 m/s²
- C) 8.87 m/s²**
- D) 24.79 m/s²

5. The average distance from Earth to the Sun is about 93 million miles. A basketball has a diameter of roughly 9.5 inches. How many basketball diameters would fit along the average distance from Earth to the Sun?

- A) 1.18×10^9
- B) 6.65×10^7
- C) 3.89×10^{10}**
- D) 9.9×10^8

6. A regulation basketball court is 94 feet long. The distance from the Earth to the Moon averages about 238,855 miles. How many regulation basketball court lengths, in miles, would span the Earth-Moon distance?

- A) 13,389**
- B) 6,711
- C) 25,400
- D) 1,270

7. The weight of a standard NBA basketball is between 20 and 22 ounces. The average density of the Sun is about 1.41 grams per cubic centimeter. What is the approximate density of the Earth?

- A) 0.00005 g/cm^3
- B) 0.005 g/cm^3
- C) 5.51 g/cm^3**
- D) 1.41 g/cm^3

8. A basketball hoop's inner diameter is 18 inches. The diameter of Mars is approximately 4,212 miles. How many Mars diameters would fit across the Sun's diameter (approx. 865,000 miles)?

- A) 204**
- B) 408
- C) 816
- D) 1632

9. The surface area of a standard NBA basketball is approximately 278 square inches. The surface area of Uranus is about 8.1×10^9 square miles. How many times larger is Uranus's surface area compared to a basketball's surface area (in square miles)?

- A) 4.6×10^7
- B) 2.9×10^8**
- C) 1.5×10^{10}
- D) 8.1×10^9

10. The speed of a typical slam dunk shot can reach over 60 mph. The average speed of Earth in its orbit around the Sun is approximately 67,000 mph. Which planet has an orbital speed significantly slower than Earth's?

- A) Mercury
- B) Venus
- C) Mars
- D) Neptune**

11. A regulation basketball backboard is 6 feet wide. The diameter of the Sun is approximately 865,000 miles. How many backboard widths (in miles) would fit across the Sun's diameter?

- A) 144,167**
- B) 72,083
- C) 432,500
- D) 288,333

12. The time it takes for a basketball to travel from the three-point line to the hoop, on average, is less than a second. The time it takes for light to travel from the Sun to the Earth is about 8 minutes and 20 seconds. How many seconds is this?

- A) 480
- B) 500**
- C) 520
- D) 600

13. A standard basketball has a mass of about 0.6 kg. The mass of the Earth is approximately 5.97×10^{24} kg. How many times greater is Earth's mass than a basketball's mass?

- A) 1.0×10^{25}
- B) 9.95×10^{24}**
- C) 5.97×10^{24}
- D) 1.0×10^{24}

14. The height of a basketball hoop is 10 feet. The average distance from Earth to the Sun is about 93 million miles. Convert 10 feet to miles. How many Earth-Sun distances would fit into 10 feet?

- A) 1.89×10^{-7}
- B) 1.89×10^{-9}**
- C) 5.3×10^6
- D) 5.3×10^8

15. The spin rate of a basketball can vary, but for a clean shot, it's relatively consistent. The rotational period of the Earth is approximately 24 hours. What is the rotational period of Mercury?

A) 243 Earth days

B) 58.6 Earth days

C) 88 Earth days

D) 24 hours