

# Worksheet: Units of Astronomy: The Astronomical Unit (AU)



**Q1:** What is  $3.1 \times 10^{13}$  km in AU? Give your answer to 2 significant figures.

A 560,000 AU

B 470,000 AU

C 120,000 AU

D 320,000 AU

E 210,000 AU

**Q2:** How many meters are there in 3.0 AU? Give your answer to 2 significant figures.

A  $4.5 \times 10^{11}$  m

B  $4.3 \times 10^{11}$  m

C  $4.1 \times 10^{11}$  m

D  $4.2 \times 10^{11}$  m

E  $4.7 \times 10^{11}$  m

**Q3:** Saturn orbits the Sun at a distance of about 9.6 AU. What is this distance in meters? Give your answer to 2 significant figures.

A  $1.2 \times 10^{12}$  m

B  $1.3 \times 10^{12}$  m

C  $1.0 \times 10^{12}$  m

D  $1.6 \times 10^{12}$  m

E  $1.4 \times 10^{12}$  m

**Q4:** What is  $10.9 \times 10^{11}$  m in AU? Give your answer to 2 significant figures.

A 7.3 AU

B 5.0 AU

C 9.4 AU

D 6.8 AU

E 2.1 AU

**Q5:** Mercury orbits the Sun at a distance of about  $5.79 \times 10^{10}$  m. What is this distance in AU? Give your answer to 2 significant figures.

A 0.71 AU

B 0.24 AU

C 0.39 AU

D 0.66 AU

E 0.57 AU

**Q6:** Pluto orbits the Sun at a distance of about 39 AU. How many hours does it take a beam of light from the Sun to travel this distance? Give your answer to 2 significant figures.

A 7.0 hours

B 0.40 hours

C 5.4 hours

D 4.8 hours

E 3.5 hours

**Q7:** How many kilometers are there in 210 AU? Give your answer to 2 significant figures.

A  $3.0 \times 10^{10}$  km

B  $3.0 \times 10^{13}$  km

C  $3.2 \times 10^{13}$  km

D  $3.2 \times 10^{10}$  km

E  $3.5 \times 10^{10}$  km

**Q8:** Which distance is larger: 200,000 AU or 17 ly?

A 17 ly

B 200,000 AU

**Q9:** Which of the following is the correct description of how the astronomical unit is defined?

A The astronomical unit is a unit of length roughly equal to the distance between Earth and the Sun.

B The astronomical unit is a unit of length roughly equal to the distance between Earth and the Moon.

C The astronomical unit is a unit of length roughly equal to the distance between Jupiter and the Sun.

D The astronomical unit is a unit of length roughly equal to the distance between Pluto and the Sun.

E The astronomical unit is a unit of length roughly equal to the distance between Venus and the Sun.