

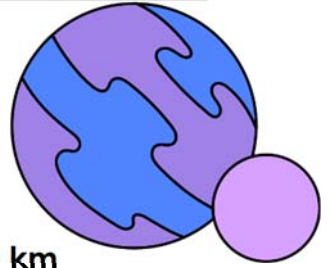
Name _____

Measuring the Cosmos

Key Measure Conversions

1 m = 0.001 km | 1 AU (astronomical unit) \approx 149,600,000 km

1 km = 1000 m | 1 light-year \approx 9.461×10^{12} km



A. Metric Conversions

1. The launch tower is **120 meters** tall. Convert to **kilometers**. _____
2. A communication cable stretches **0.75 kilometers**. Convert to **meters**. _____
3. Your spacecraft traveled **1,200,000 meters** on its initial launch. How many **km** is that? _____
4. A probe moves **8.2 km** in space. Convert this distance to **meters**. _____

B. Interplanetary Conversions

5. The Moon is about **384,400 km** from Earth. How many **meters** away is that? _____
6. Mars is roughly **225,000,000 km** from Earth. Convert to **astronomical units (AU)**. _____
7. Neptune orbits the Sun at about **4.5 billion km**. Convert this to **AU**. _____
8. A distant asteroid is **14.96×10^8 km** from the Sun. Express this in **AU**. _____

C. Interstellar Distances

9. The nearest star, Proxima Centauri, is **4.01×10^{13} km** away. How many **light-years** is that? _____
10. A signal travels **9.461×10^{11} km**. How many **light-years** has it traveled? _____

Bonus Challenge

11. The Voyager 1 spacecraft has traveled **24 billion kilometers** from Earth. How many **astronomical units** is that?
