

Scaled Model of the Solar System

On the homework, you calculated the radius and distance from the Sun in order to build a scaled model of the Solar System using a 4-in radius basketball as the Sun. Here are the results for the scaled radii and average distance from the Sun.

Planet	Radius (in)	Distance from Sun (ft)
Mercury	0.014	28
Venus	0.035	52
Earth	0.037	72
Mars	0.020	110
Jupiter	0.41	370
Saturn	0.35	680
Uranus	0.15	1400
Neptune	0.14	2200 (0.4 mi)
Pluto	0.0069	2800 (0.5 mi)

Table 1: Scaled radii and average distances from the Sun for the planets in our scaled model

Application

1. Which planet is closest in size to the Earth?
2. Which planet is largest?
3. How much larger is the distance from the Sun to Jupiter compared to the distance from the Sun to Mars? In other words, is Jupiter about 2 times further, 3 times further, 4 times further or 5 times further than the Sun to Mars?
4. What percentage of the radius of the Sun is Jupiter? In other words, is the radius of Jupiter 1%, 5%, 10%, or 50% of the radius of the Sun?