Kepler's Law III says that $T^2 = \text{constant} * R^3$ for planetary motion. If planet A has a period, T_A, twice that of planet B, then A is _____times as far from the sun as B.

1. 2X
2. 4X
3. 8X
4. None of the above is correct within 10%

0% 0% 0% 0%

The answer is #4, since none of the answers offered is within 10% of the correct answer; as follows,

- If T doubles, T^2 increase by 4X;
- Then R^3 increase by 4X,
  and R increases by $4^{1/3} = 1.59X$.
  Since this deviates by more than 10% from the most nearly correct answer offered (#1 = 2X), the correct answer is #4.