

# Worksheet: Orbital Mechanics



Question Video

**Q1:** Two planets, A and B, orbit a star. Both planets have circular orbits. Planet A orbits the star at a distance of  $1.5 \times 10^8$  km and at a speed of 30 km/s. Planet B orbits the star at a distance of  $4.8 \times 10^8$  km and at a speed of 17 km/s.

► How many times is the length of planet B's orbit greater than planet A's?

A 4.8

B 1.764

C 3.2

D 0.313

E 0.566

► How many times longer does it take for planet B to orbit the star than planet A? Give your answer to 1 decimal place.

A 0.3

B 3.2

C 5.6

D 1.7

E 0.5