25. Astronomers use the following relationship to estimate the mass M of a galaxy

$$M = \frac{v^2 r}{G}$$

where v is the orbital speed of a star in the outer regions of the galaxy, in m s^{-1}

   r is the orbital radius of the star, in m

   G is the Universal Constant of Gravitation.

A star orbits at a radius of 4.0×10^{20} m in the outer regions of the Triangulum galaxy.
The orbital speed of the star is 120 km s^{-1}.
Based on this information, the mass of the Triangulum galaxy is:

A 3.8×10^{20} kg

B 7.2×10^{32} kg

C 8.6×10^{34} kg

D 7.2×10^{35} kg

E 8.6×10^{40} kg.