

## Astronomy Ranking Task: Dark Matter

### Exercise #3

**Description:** The table below lists some objects in the Milky Way Galaxy along with their distances from the center of the Galaxy. The outer “edge” of the nuclear bulge is at roughly 6500 lightyears.

Object	Galactocentric Radius (ly)
A. globular cluster	40,000
B. open cluster	8000
C. star forming region	20,000
D. emission nebula	29,000
E. F-type star	10,000
F. supernova remnant	6500

**A. Ranking instructions:** Rank the orbital speeds of the objects.

Ranking Order: Slowest 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_ 6 \_\_\_\_\_ Fastest

Or, all the objects orbit with approximately the same speed. \_\_\_\_\_ (indicate with a check mark)

Or, there is not enough information to determine the orbital speeds. \_\_\_\_\_ (indicate with a check mark)

**Carefully explain** your reasoning for ranking this way:

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**B. Ranking instructions:** Rank the lengths of the objects’ orbital periods.

Ranking Order: Shortest 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_ 6 \_\_\_\_\_ Longest

Or, all the objects have approximately the same orbital period. \_\_\_\_\_ (indicate with a check mark)

Or, there is not enough information to determine the lengths of the orbital periods. \_\_\_\_\_ (indicate with a check mark)

**Carefully explain** your reasoning for ranking this way:

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