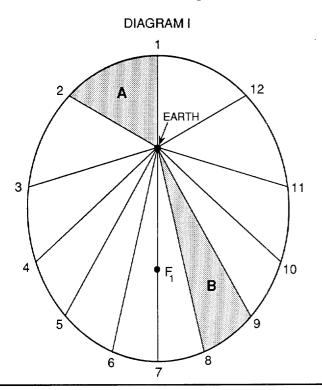
Base your answers to questions 81 through 85 on your knowledge of earth science, the Earth Science Reference Tables, and the diagrams and information below. Diagram I represents the orbit of an Earth satellite, and diagram II shows how to construct an elliptical orbit using two pins and a loop of string. Table 1 shows the eccentricities of the orbits of the planets in the solar system.



The satellite was at position 1 precisely at midnight on the first day. It arrived at position 2 the next midnight. 3 the next, and so on.

DIAGRAM II

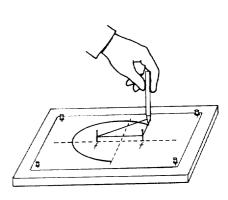


Table 1

Planet	Eccentricity of Orbit
Mercury	0.206
Venus	0.007
Earth	0.017
Mars	0.093
Jupiter	0.048
Saturn	0.056
Uranus	0.047
Neptune	0.008
Pluto	0.250

- 81 At which position represented in diagram I would the gravitational attraction between the Earth and the satellite be greatest?
 - (1) 1

(2) 7

- (4) 11
- 82 According to table 1, which planet's orbit would most closely resemble a circle?
 - 1 Mercury

3 Saturn

2 Venus

- 4 Pluto
- 83 What is the approximate eccentricity of the satellite's orbit?
 - (1) 0.31

(3) 0.70

(2) 0.40

(4) 2.5

- Note that questions 84 and 85 have only three choices.
- 84 The Earth satellite takes 24 hours to move between each numbered position on the orbit. How does area A (between positions 1 and 2) compare to area B (between positions 8 and 9)?
 - 1 Area *A* is smaller than area *B*.
 - 2 Area A is larger than area B.

3 Area A is equal to area B.

- 85 If the pins in diagram II were placed closer together, the eccentricity of the ellipse being con
 - structed would 1 decrease
 - 2 increase
 - 3 remain the same