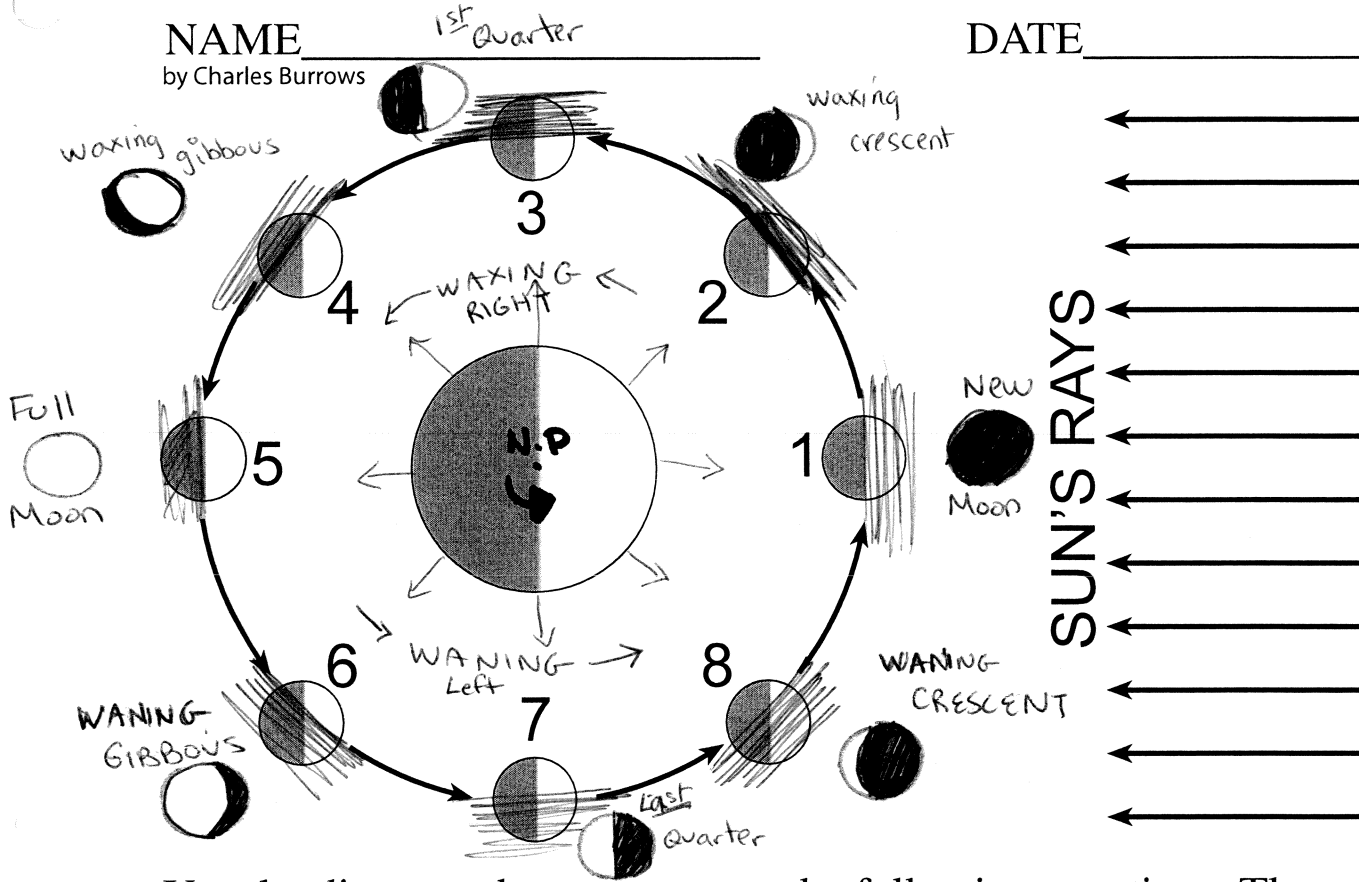


key

NAME _____

by Charles Burrows

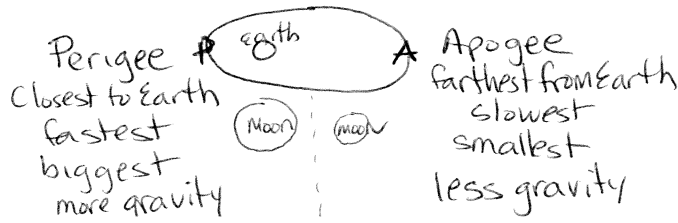
DATE _____



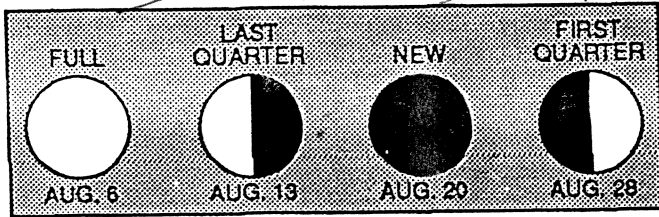
Use the diagram above to answer the following questions. The diagram shows the Earth, the Sun's rays, and the Moon at eight different positions on its orbit. Write the number(s) of the appropriate position next to each of the following events.

- | | | |
|--------------------|--------------|-------------------|
| 1) full moon | <u>5</u> | Full |
| 2) new moon | <u>1</u> | New |
| 3) first quarter | <u>3</u> | 1st Quarter |
| 4) third quarter | <u>7</u> | Last Quarter |
| 5) waning crescent | <u>8</u> | waning crescent |
| 6) waxing crescent | <u>2</u> | waxing crescent |
| 7) waning gibbous | <u>6</u> | waning g. gibbous |
| 8) waxing gibbous | <u>4</u> | waxing g. gibbous |
| 9) spring tide | <u>1 + 5</u> | Full / New Moon |
| 10) neap tide | <u>3 + 7</u> | Quarter Moon |
| 11) lunar eclipse | <u>5</u> | - Full Moon |
| 12) solar eclipse | <u>1</u> | - New Moon |

- * Moon's Rotation = Moon's Revolution = 27.3 days
- * Full cycle of phases = month ~ 29 days
- * Moon has no atmosphere to protect it
- * Gravity from Sun & Moon cause Tides on Earth



1. The diagrams below show the phases of the Moon as viewed by an observer in New York State at different times in August.



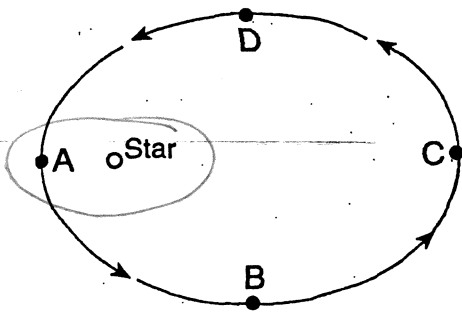
Which phase could have been observed on August 17?

- 1) NEW CRESCENT
- 2) NEW MOON
- 3) OLD GIBBOUS
- 4) OLD CRESCENT

2. The passage of the Moon into Earth's shadow causes a

- 1) lunar eclipse
- 2) solar eclipse
- 3) new Moon
- 4) full Moon

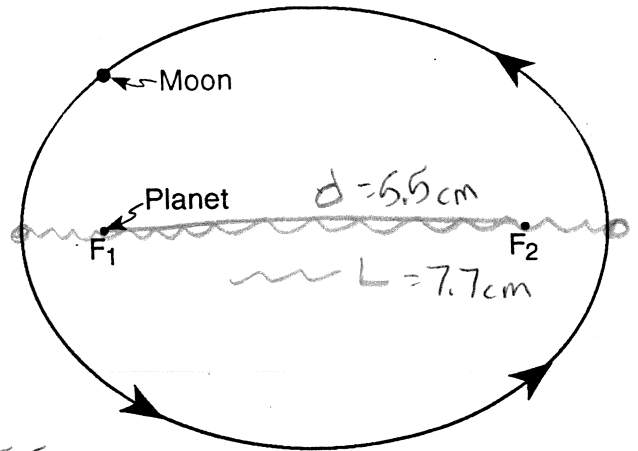
3. Base your answer to the question below on the diagram below. The diagram represents the path of a planet orbiting a star. Points A, B, C, and D indicate four orbital positions of the planet.



When viewed by an observer on the planet, the star has the largest apparent diameter at position

- 1) A
- 2) B
- 3) C
- 4) D

4. The diagram below represents the elliptical orbit of a moon revolving around a planet. The foci of this orbit are the points labeled F_1 and F_2 .

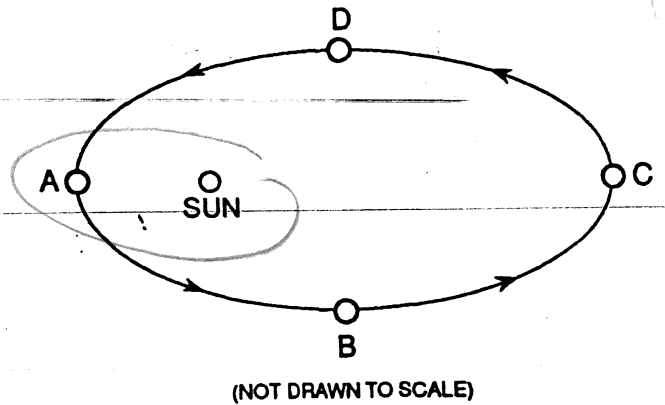


$e = \frac{5.5 \text{ cm}}{7.7 \text{ cm}} = 0.714$ (Drawn to scale)

What is the approximate eccentricity of this elliptical orbit?

- 1) 0.3
- 2) 0.5
- 3) 0.7
- 4) 1.4

5. The diagram below represents the orbit of a planet around the Sun.



At which location is the gravitational attraction between the Sun and the planet greatest?

- 1) A
- 2) B
- 3) C
- 4) D

6. The same side of the Moon always faces Earth because the

- (1) Moon's period of rotation is longer than its period of revolution around Earth
- (2) Moon's period of rotation is shorter than its period of revolution around Earth
- (3) Moon rotates once as it completes one revolution around Earth
- (4) Moon does not rotate as it completes one revolution around Earth