



# $\pi$ IN THE SKY<sup>8</sup>

## Answer Key

### Sample Science

How many pads needed to make contact with Bennu's surface to meet the mission requirement?

1. Compute the area of each sample pad.

$$A = \pi r^2$$

$$\pi(0.75 \text{ cm})^2 \approx 1.8 \text{ cm}^2$$

2. Divide the mission requirement for contact with Bennu's surface by the area of the sample pad.

$$26 \text{ cm}^2 \div (1.8 \text{ cm}^2/\text{pad}) \approx 15 \text{ pads}$$

If all 24 pads contacted Bennu, how much asteroid surface area would the contact pads sample?

1. Multiply the number of pads by the surface area contacted by one pad.

$$24 \text{ pads} \cdot (1.8 \text{ cm}^2/\text{pad}) \approx 43 \text{ cm}^2$$

