

Try This 5 Possible Solutions

TT 5. *Foundations and Pre-calculus Mathematics 10* (Pearson), questions 3.a), 3.c), 8, 9, 13.a), 13.b), and 15 on pages 51 and 52

3. a) $SA = 4\pi r^2$

$$SA = 4\pi (5 \text{ cm})^2$$

$$SA = 314 \text{ cm}^2$$

3. c) $SA = \pi d^2$

$$SA = \pi (8 \text{ ft})^2$$

$$SA = 201 \text{ ft}^2$$

8. $SA = 4\pi r^2$

$$127 \text{ cm}^2 = 4\pi r^2$$

$$\frac{127 \text{ cm}^2}{4\pi} = \frac{4\pi r^2}{4\pi}$$

$$\frac{127 \text{ cm}^2}{4\pi} = r^2$$

$$\sqrt{10.11 \text{ cm}^2} = \sqrt{r^2}$$

$$r = 3.2 \text{ cm}$$

9. For this question, students can use the same method as the solution in question 8 and then double the radius, or they can use the surface area formula base on the diameter:

$$SA = \pi d^2$$

$$452 \text{ in}^2 = \pi d^2$$

$$\frac{452 \text{ in}^2}{\pi} = \frac{\pi d^2}{\pi}$$

$$143.88 \text{ in}^2 = d^2$$

$$\sqrt{143.88 \text{ in}^2} = \sqrt{d^2}$$

$$d = 12 \text{ in}$$

13. a) $SA = \pi d^2$

$$SA = \pi (12\,756 \text{ km})^2$$

$$SA = 511\,185\,932.5 \text{ km}^2$$

b) $0.7 \times 511\,185\,932.5 = 357\,830\,153 \text{ km}^2$ (note 70% is 0.7 as a decimal)

15. $SA = \pi d^2$

$$SA = \pi (2.5 \text{ cm})^2$$

$$SA = 19.63 \text{ cm}^2$$

Each sphere has a surface area of 19.63 cm^2 .

$$4710 \text{ cm}^2 \div 19.63 \text{ cm}^2 = 239.9 \text{ spheres}$$

The number of complete spheres that can be glazed is 239.