Lesson 17: Surface Area of Cylinders, Cones and Spheres [PATHS]

Year 10 Mathematics Unit 1 — Block C | Worksheet

Name _____ Date _____ Class _____

Multiple Choice

Q1. What is the curved surface area of a cylinder with radius 5 cm and height 8 cm?

A) 40pi cm^2 B) 80pi cm^2 C) 130pi cm^2 D) 200pi cm^2

Q2. A cone has radius 6 cm and perpendicular height 8 cm. What is its slant height?

A) 10 cm B) 14 cm C) 2 cm D) 48 cm

Q3. What is the surface area of a sphere with radius 3 cm?

A) 9pi cm^2 B) 18pi cm^2 C) 27pi cm^2 D) 36pi cm^2

Q4. An open cylinder (no top) has radius 4 cm and height 9 cm. What is its total surface area?

A) 72pi + 16pi cm^2 B) 72pi + 32pi cm^2 C) 36pi + 16pi cm^2 D) 72pi cm^2

Q5. A cylinder and a sphere have the same radius r. The cylinder has height 2r. What is the ratio of the cylinder's total surface area to the sphere's surface area?

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

Short Answer

Q6. Find the total surface area of a closed cylinder with radius 7 cm and height 12 cm. *(2 marks)*

Q7. A cone has radius 5 cm and perpendicular height 12 cm. Find its total surface area. *(3 marks)*

Q8. Explain why a sphere has the smallest surface area for a given volume of any 3D shape, and give two real-world examples where this property is useful. *(3 marks)*

Key Formulas

- Write any formulas you need here.