LESSON MAKER PRO

Surface Area Sprint

Find the area covering each solid.

HIGH SCHOOL · MA.912.GR.4.6

MA.912.GR.4.6 "Solve mathematical and real-world problems involving the surface area of three-dimensional figures limited to cylinders, pyramids, prisms, cones and spheres."

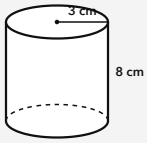
NAME _____ DATE _____

COVER EVERY OUTSIDE FACE

Surface area is the total area of every outside face or curved surface. For a closed cylinder, use $2\pi r^2 + 2\pi rh$. For a cone, add πr^2 and πrs.

WORKED EXAMPLE

Find the total surface area of the closed cylinder shown.



1. Use $SA = 2\pi r^2 + 2\pi rh$.
2. $SA = 2\pi(3)^2 + 2\pi(3)(8)$.
3. $SA = 18\pi + 48\pi = 66\pi$.

Answer: 66π cm²

PRACTICE 4 problems

1 Find the surface area of a rectangular prism with length 4 cm, width 5 cm, and height 9 cm.

ANSWER _____

2 Find the total surface area of a cone with radius 5 cm and slant height 7 cm.

ANSWER _____

3 A square pyramid has base side length 6 cm and slant height 10 cm. Find its total surface area.

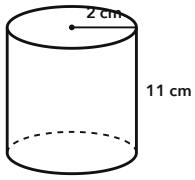
ANSWER _____

4 Find the surface area of a sphere with radius 4 cm.

ANSWER _____

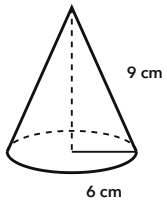
APPLY IT Show your work

1 A student wraps the outside of the closed Bluetooth speaker shown. How much wrap is needed?



ANSWER _____

2 The theater club covers the entire cone-shaped prop shown with fabric. How much fabric is needed?



ANSWER _____

CHALLENGE One step up

A closed cylinder has radius 4 cm and height 12 cm. A sphere has radius 5 cm. Which solid has less surface area, and by how much?

WORK SPACE AND ANSWER

ANSWER KEY

Surface Area Sprint

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find the surface area of a rectangular prism with length 4 cm, width 5 cm, and height 9 cm.	**202 cm²**
2	Find the total surface area of a cone with radius 5 cm and slant height 7 cm.	**60π cm²**
3	A square pyramid has base side length 6 cm and slant height 10 cm. Find its total surface area.	**156 cm²**
4	Find the surface area of a sphere with radius 4 cm.	**64π cm²**

PART 2 · APPLY IT

1. **52π cm²** Use $2\pi r^2 + 2\pi rh$. Substitute r = 2 and h = 11.
2. **90π cm²** Add the base area πr^2 and lateral area πrs. Substitute r = 6 and s = 9.

CHALLENGE

The sphere has less surface area by 28π cm².

Accept equivalent exact forms with π and correct square units. For the challenge, accept work showing cylinder surface area 128π cm^2 and sphere surface area 100π cm^2.