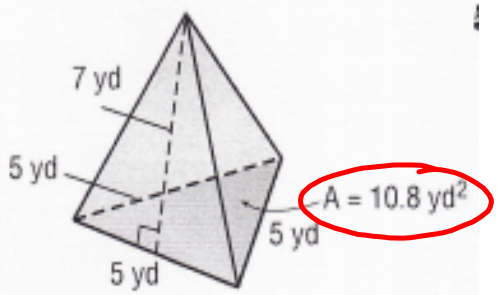
Homework???

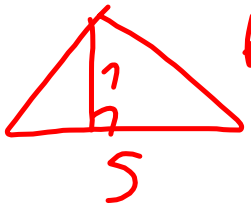
Worksheet - Surface Area of Pyramids and Cones.pdf

Solutions...

1) 113.1 in^2 2) 40 m^2 3) 188.5 mm^2 4) 63.3 yd^2
5) 84 ft^2 6) 263.9 cm^2 7) 208 m^2 8) 301.6 in^2
9) 123.7 ft^2 10) 263.2 mm^2 11) 95.7 cm^2 12) 210 yd^2
13) 74.4 cm^2 14) 152 yd^2 15) 857.7 in^2

4.





$A = \frac{7 \times 5}{2}$

$= 17.5$

$SA = 10.8 + 3(17.5)$

$63.3\ yd^2$

What about a sphere???

The surface area of a sphere is related to the curved surface area of a cylinder that encloses it. ?

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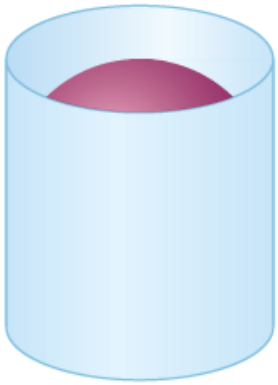

If the curved surface of the cylinder is made from paper, it can be cut and pasted on the surface of the sphere to cover it.

1.6 Surface Area and Volume of a Sphere

The curved surface area, SA_C, of a cylinder with base radius r and height h is:

$SA_C = 2$

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So, this is also the formula for the surface area of a sphere with radius r.

Surface Area of a Sphere

The surface area, SA, of a sphere with radius r is:

$SA = 4\pi r^2$

1.6 Surface Area and Volume of a Sphere

Example 1 Determining the Surface Area of a Sphere

The diameter of a baseball is approximately 3 in.
Determine the surface area of a baseball to the nearest square inch.

$r = 1.5$

SOLUTION

(Erase to reveal)

$$SA = 4\pi r^2$$
$$= 4\pi(1.5)^2$$
$$= 28.3 in^2$$

Example 2 Determining the Diameter of a Sphere

The surface area of a lacrosse ball is approximately 20 square inches. What is the diameter of the lacrosse ball to the nearest tenth of an inch?

SOLUTION

(Erase to reveal)

SAMOEB

$SA_{sphere} = 4\pi r^2$

$\frac{20}{4\pi} = \frac{4\pi r^2}{4\pi}$

$\sqrt{1.59} = \sqrt{r^2}$

$1.26 = r$

So $d = 2(1.26)$

$d = 2.5$ in

SAMPLE → Rearrange

CHECK YOUR UNDERSTANDING

2. The surface area of a soccer ball is approximately 250 square inches. What is the diameter of a soccer ball to the nearest tenth of an inch?

SA

$SA_{sphere} = 4\pi r^2$

$\frac{250}{4\pi} = \frac{4\pi r^2}{4\pi}$

$\sqrt{19.89} = \sqrt{r^2}$

$4.46 = r$

So $d = 2r$

$= 2(4.46)$

$= 8.9$ in

HOMEWORK...

Worksheet - Surface Area of 3D Objects.doc

Attachments

Worksheet - Surface Area of Pyramids and Cones.pdf

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