

Problems Involving Surface Area.notebook

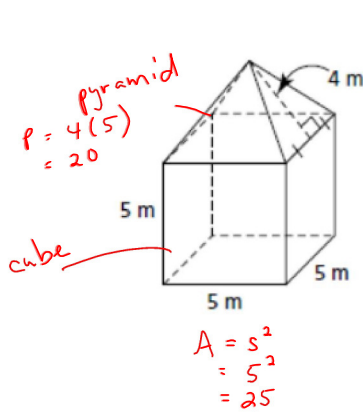
MAAPC20S

Measurement

Lesson 6

Example 1 – Determining the Surface Area of a Composite Object

Determine the surface area of this composite object.



Pyramid (LSA)

$$LSA = \frac{Ps}{2}$$

$$= \frac{20(4)}{2}$$

$$= 40m^2$$

Cube (5 sides showing)

$$A = 5(25)$$

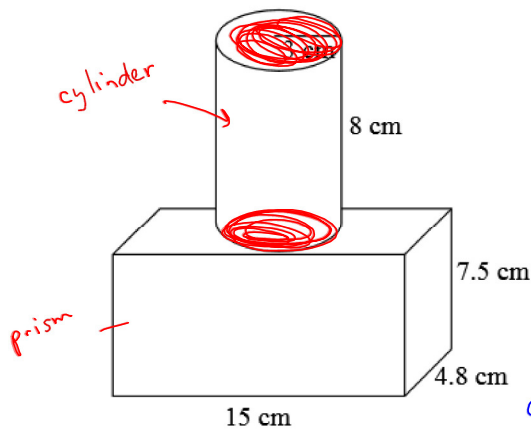
$$= 125m^2$$

$$SA = 40 + 125$$

$$= 165m^2$$

Example 2

Determine the surface area of the following complex object ~~to the nearest tenth of a centimeter.~~



cylinder

$$LSA = 2\pi rh$$

$$= 2\pi(3)(8)$$

$$= 150.796 \dots$$

rect prism

$$SA = 2lw + 2lh + 2wh$$

$$= 2(15)(4.8) + 2(15)(7.5) + 2(4.8)(7.5)$$

$$= 441 cm^2$$

$$Total = 591.796 cm^2$$

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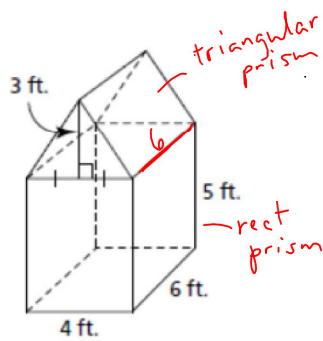
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Example 3 – Solving a Problem Related to a Composite Object

A tool shed is formed by a rectangular prism with a triangular prism as its roof. Determine the surface area of the tool shed ~~to the nearest square~~
~~feet~~



$$3^2 + 2^2 = w^2$$

$$13 = w^2$$

$$\sqrt{13} = w$$

Triangular prism

2 triangles

and

2 rectangles

$$A = \frac{bh}{2} \times 2$$

$$= \frac{4(3)}{2} \times 2$$

$$= 12 \text{ ft}^2$$

$$A = lw \times 2$$

$$= 6(\sqrt{13}) \times 2$$

$$= 43.2666\dots$$

Rect prism

2 sides

front & back

$$A = 2(5)(6) + 2(5)(4)$$

$$= 100 \text{ ft}^2$$

$$SA = 12 + 43.2666\dots + 100$$

$$= 155.267 \text{ ft}^2$$

Assignment: Day 1; Pg 59; 5 (only volume), 7 (a,c,d), 8, 9, 10
Day 2; Pg 59; 3, 5 (surface area), 6