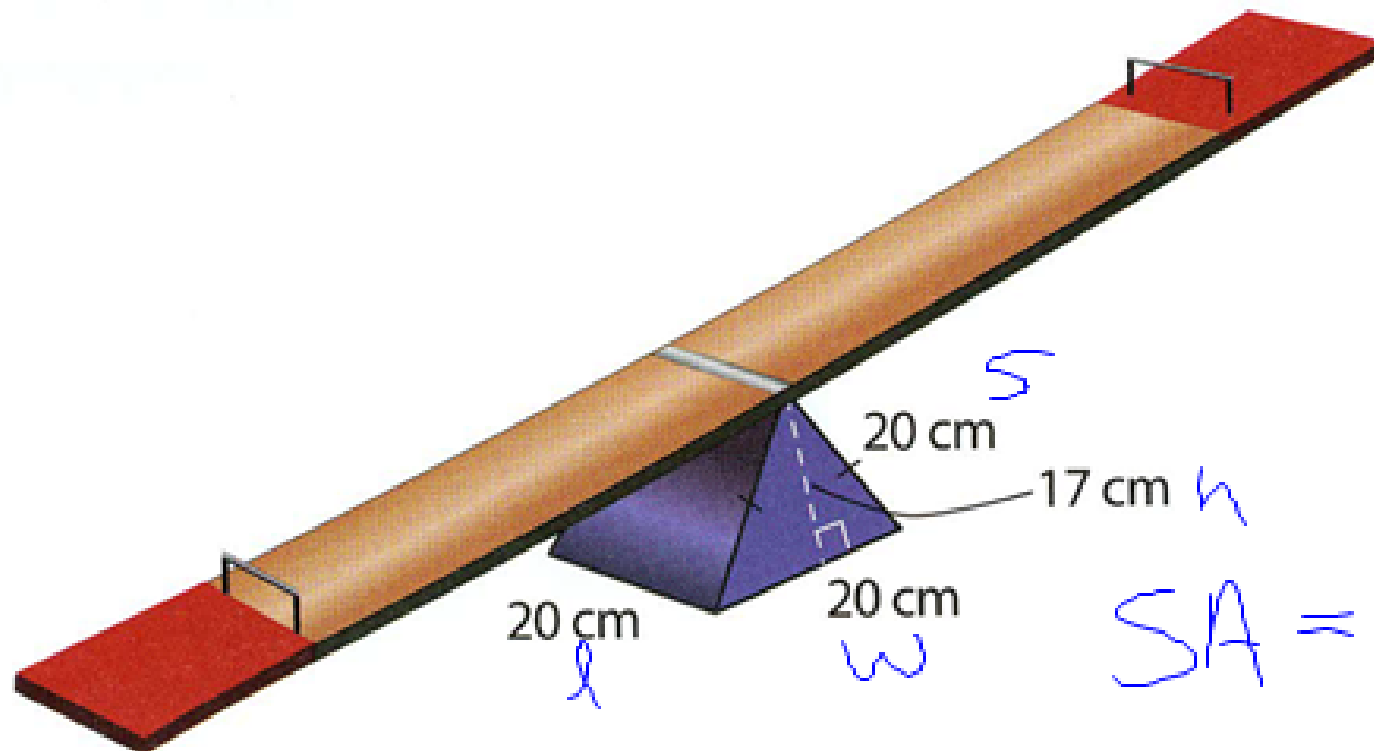


3. The fulcrum, or base, of a seesaw is a triangular prism. Determine its surface area.



HW was
① b, ③

$$SA = lw + 2ls + wh$$

$$SA = (20)(20) + 2(20)(20) + (20)(17)$$
$$= 400 \text{ cm}^2 + 800 \text{ cm}^2 + 340 \text{ cm}^2$$

$$SA = 1540 \text{ cm}^2$$

Finding the Surface Area of Square-Based Pyramids



So far....

$$SA_{\text{Rectangular Prism}} = \underbrace{2lw}_{\text{Bottom}} + \underbrace{2lh}_{\text{Sides}} + \underbrace{2wh}_{\text{Ends}}$$

$$SA_{\text{Triangular Prism}} = \underbrace{lw}_{\text{Bottom}} + \underbrace{2ls}_{\text{Sides}} + \underbrace{wh}_{\text{Ends}}$$

Remember:

$s = \text{slant}$

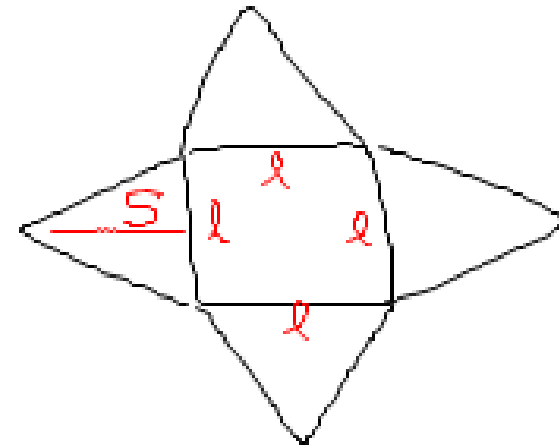
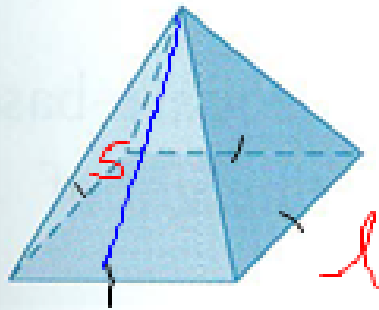
$l = \text{length}$

$w = \text{width}$

$h = \text{height}$

square-based pyramid

- a 3-D figure with a square base and four triangular sides that connect at one point



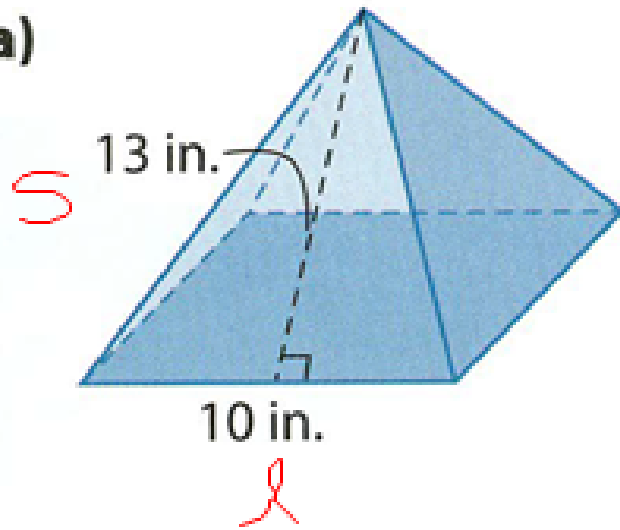
$$SA = A_{\text{square}} + 4 \times A_{\text{triangle}}$$

$$SA = (l \times l) + 4 \times \frac{1}{2} ls$$

$$SA = l^2 + 2ls$$

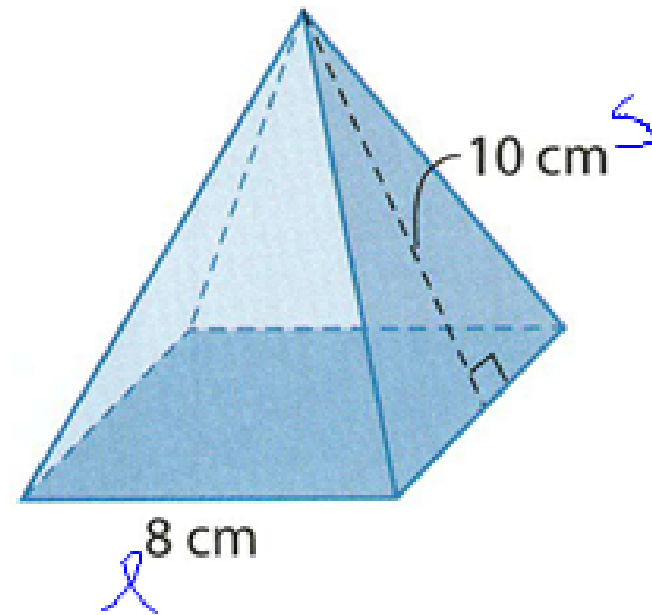
1. Calculate the surface area of each square-based pyramid.

a)



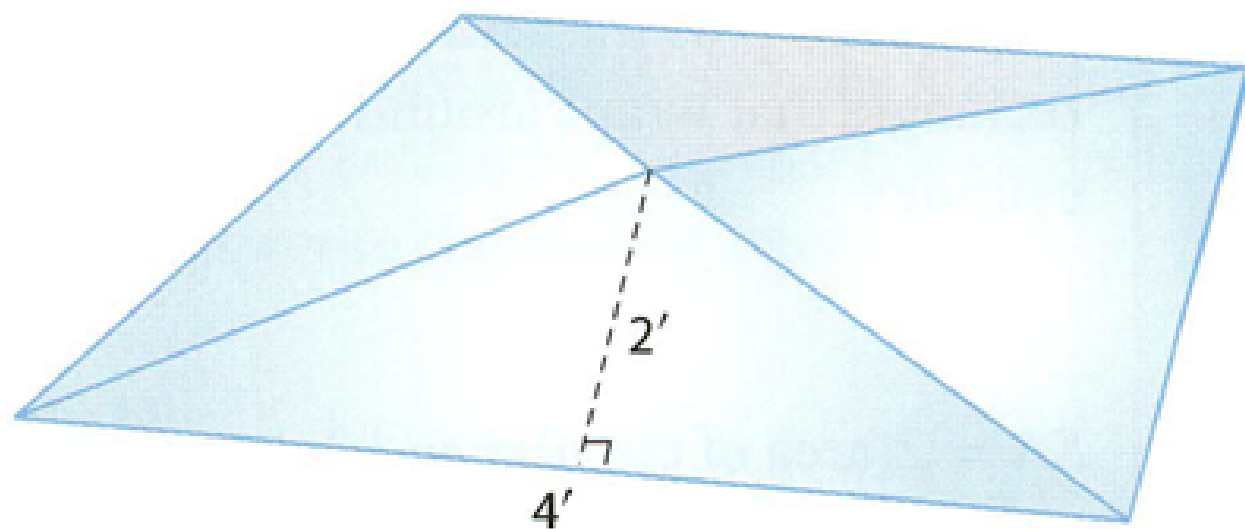
$$\begin{aligned}SA &= l^2 + 2ls \\SA &= (10 \text{ in})^2 + 2(10 \text{ in})(13 \text{ in}) \\SA &= 100 \text{ in}^2 + 260 \text{ in}^2 \\SA &= \underline{360 \text{ in}^2}\end{aligned}$$

b)



$$\begin{aligned}SA &= l^2 + 2ls \\SA &= (8 \text{ cm})^2 + 2(8 \text{ cm})(10 \text{ cm}) \\SA &= 64 \text{ cm}^2 + 160 \text{ cm}^2 \\SA &= \underline{224 \text{ cm}^2}\end{aligned}$$

5. A company that installs windows and doors makes pyramid-shaped skylights for the roofs of houses. The skylight has no base. Calculate the surface area of the acrylic needed for a square-based skylight that is 4' wide and has a slant height of 2'.



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