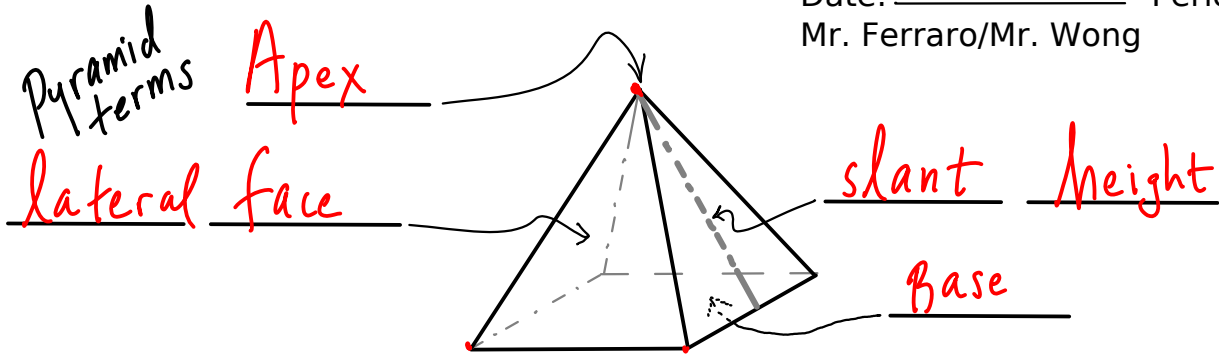


Surface Area #2: Pyramids  
Cones

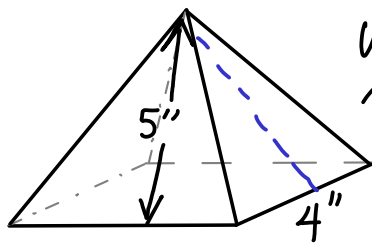
Name: \_\_\_\_\_

Date: \_\_\_\_\_ Period: \_\_\_\_\_

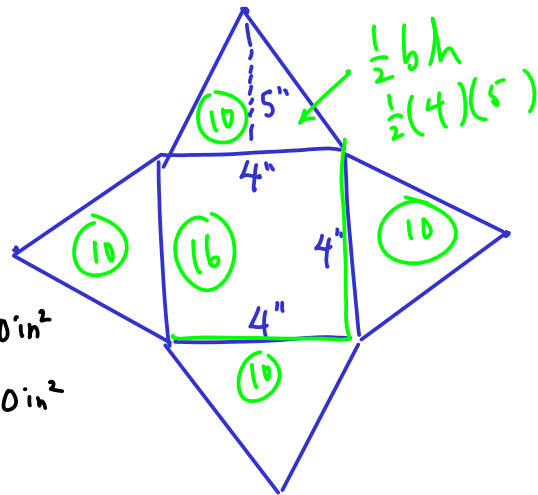
Mr. Ferraro/Mr. Wong



Ex: Find the surface area of the pyramid below with a square base:



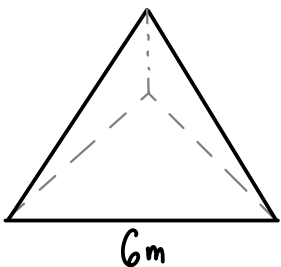
UNFOLD



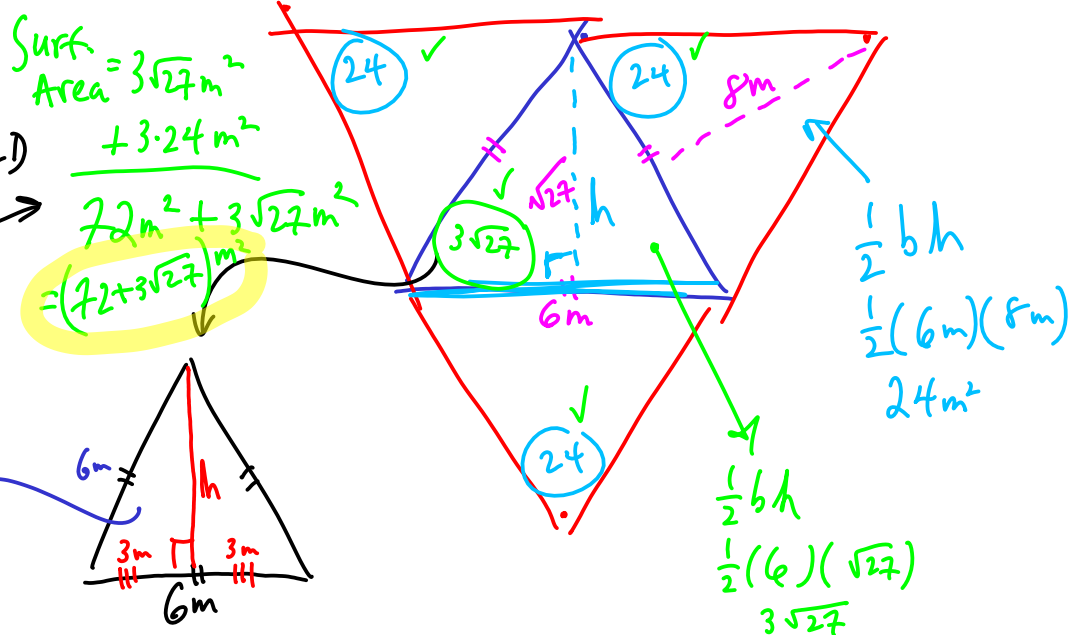
$$\begin{aligned} \text{Surface Area} &= 16\text{in}^2 + 4 \cdot 10\text{in}^2 \\ &= 16\text{in}^2 + 40\text{in}^2 \\ &= \boxed{56\text{in}^2} \end{aligned}$$

Ex: Find the surface area of the pyramid below with an equilateral  $\triangle$  base:

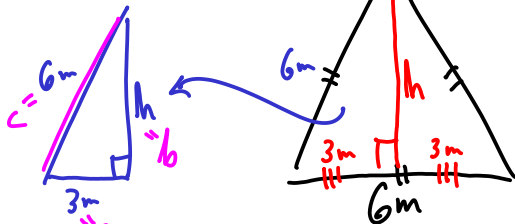
Slant height = 8m



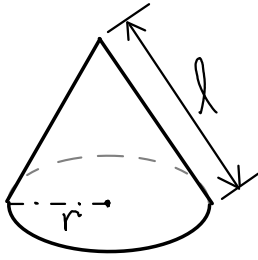
UNFOLD



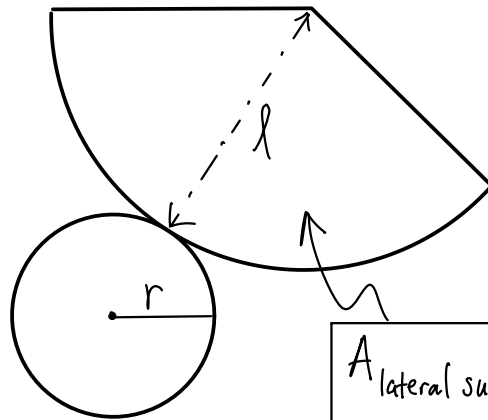
$$\begin{aligned} a^2 + b^2 &= c^2 \\ 3^2 + h^2 &= 6^2 \\ 9 + h^2 &= 36 \\ -9 & \quad -9 \\ \hline \sqrt{h^2} &= \sqrt{27} \\ h &= \sqrt{27} \end{aligned}$$



\* Cones



UNROLL  
→



$$A_{\text{lateral surface}} = \pi r l$$

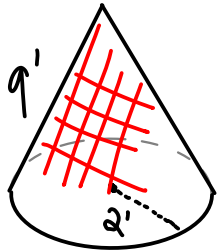
$$A_{\text{cone}} = A_{\text{base}} + A_{\text{lateral surf.}}$$

$$A_{\text{cone}} = \pi r^2 + \pi r l$$

"pir<sup>2</sup>" ("pearl")

Ex:

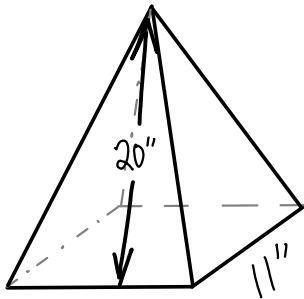
Find the surface area of the cone below:



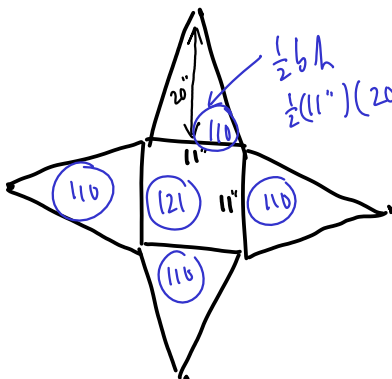
$$\begin{aligned} \text{Surf Area} &= \pi r^2 + \pi r l \\ &= \pi (2\text{ft})^2 + \pi (2\text{ft})(9\text{ft}) \\ &= \pi (4\text{ft}^2) + 18\pi \text{ft}^2 \\ &= 4\pi \text{ft}^2 + 18\pi \text{ft}^2 = \boxed{22\pi \text{ft}^2} \end{aligned}$$

EXERCISES: For each figure, determine its surface area.

1.



$$\begin{aligned} \text{Surf Area} &= 121\text{in}^2 + 4 \cdot 110\text{in}^2 \\ &= 121\text{in}^2 + 440\text{in}^2 \\ &= \boxed{561\text{in}^2} \end{aligned}$$



2.

