

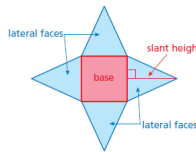
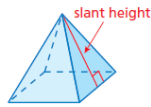
Lesson 9.2a Surface Area of Pyramids

9.2a Surface Area of Pyramids

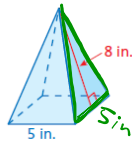
Regular pyramid - a pyramid whose base is a regular polygon. The lateral faces are triangles. The height of each triangle is the slant height of the pyramid.

S.A. of a Pyramid

S.A. = area of the base + area of lateral faces



Ex. 1

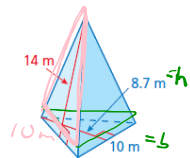


$$\begin{aligned}
 SA &= B + \text{lateral faces} \\
 SA &= s^2 + 4\left(\frac{bh}{2}\right) \\
 SA &= (5\text{ in.})^2 + 4\left(\frac{5\text{ in.}(8\text{ in.})}{2}\right) \\
 SA &= 25\text{ in.}^2 + 2(40\text{ in.}^2) \\
 SA &= 25\text{ in.}^2 + 80\text{ in.}^2 \\
 \boxed{SA} &= \boxed{105\text{ in.}^2}
 \end{aligned}$$

S.A. of a Triangular Pyramid

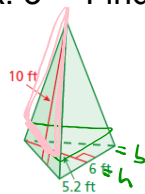
S.A. = area of the base + area of lateral faces

Ex. 2



$$\begin{aligned}
 SA &= B + \text{lat. faces} \\
 SA &= \frac{10\text{ m}(8.7\text{ m})}{2} + 3\left(\frac{10\text{ m}(14\text{ m})}{2}\right) \\
 SA &= 87\text{ m}^2 + 3\left(\frac{140\text{ m}^2}{2}\right) \\
 SA &= 87\text{ m}^2 + 3(70\text{ m}^2) \\
 SA &= 87\text{ m}^2 + 210\text{ m}^2 \\
 \boxed{SA} &= \boxed{297\text{ m}^2}
 \end{aligned}$$

Ex. 3 Find S.A.



$$\begin{aligned}
 SA &= B + \text{lat. faces} \\
 SA &= \frac{bh}{2} + 3\left(\frac{bh}{2}\right) \\
 SA &= \frac{6\text{ ft}(5.2\text{ ft})}{2} + 3\left(\frac{6\text{ ft}(10\text{ ft})}{2}\right) \\
 SA &= \frac{31.2\text{ ft}^2}{2} + 3\left(\frac{60\text{ ft}^2}{2}\right) \\
 SA &= 15.6\text{ ft}^2 + 3(30\text{ ft}^2) \\
 SA &= 15.6\text{ ft}^2 + 90\text{ ft}^2 \\
 \boxed{SA} &= \boxed{105.6\text{ ft}^2}
 \end{aligned}$$