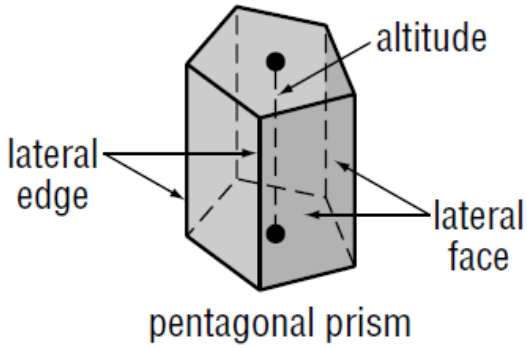
12.2 Surface Areas of Prisms and Cylinders

Lateral Area:

Sum of the areas of the lateral faces.

(area w/o bases)



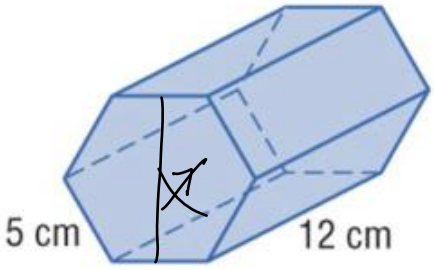
- ***Prism***:
  - Lateral Area: $L = Ph$ ← height of your prism; P: perimeter of base
  - Surface Area: $S = L + 2B$; L: lateral area; B: area of base

Find the lateral area of the regular hexagonal prism.

cm · cm

$L = Ph$

$30 \cdot 12 = 360\ cm^2$



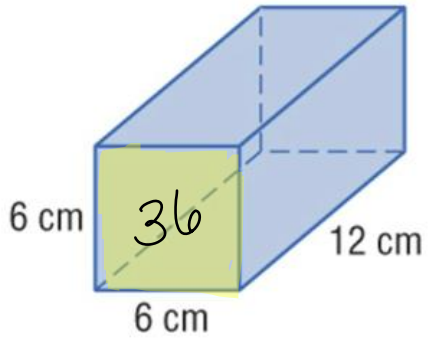
Find the surface area of the rectangular prism.

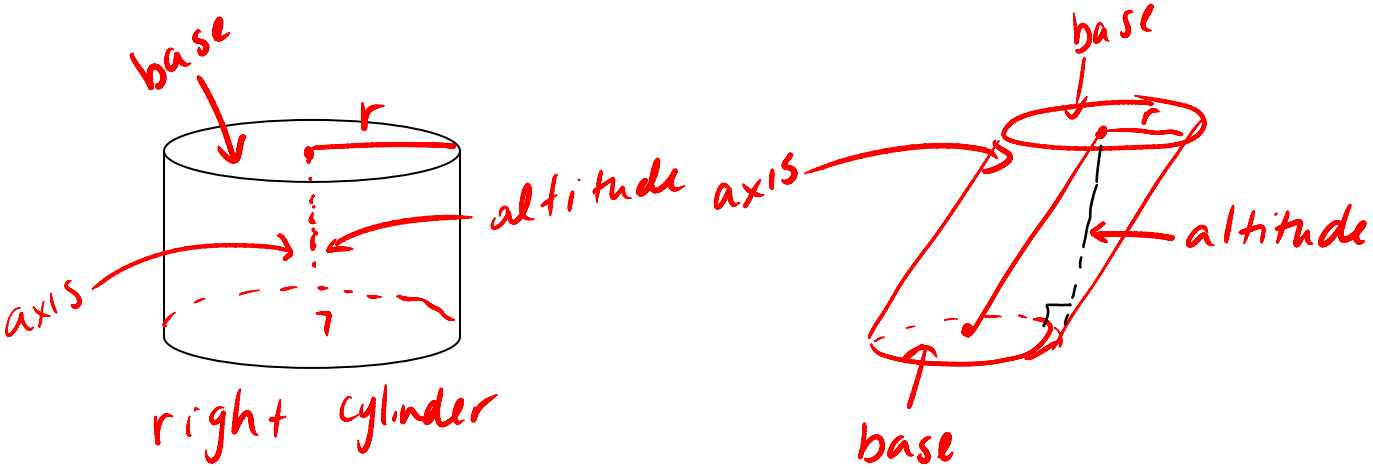
$S = L + 2B$

$S = p \cdot h + 2B$

$24 \cdot 12 + 2 \cdot 36$

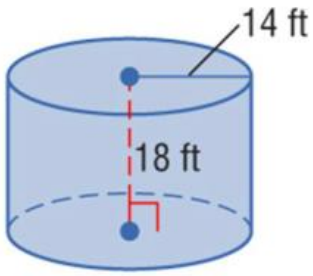
$= 360 \text{ cm}^2$





- ***Cylinder***:
  - Lateral Area: $L = 2\pi rh$ ← h: height of cylinder; r: radius
  - Surface Area: $S = 2\pi rh + 2\pi r^2$

Find the lateral area and the surface area of the cylinder. Round to the nearest tenth.



$L = 2\pi \cdot 14 \cdot 18$

$= 1583.4 \text{ ft}^2$

$S = 1583.4 + 2\pi \cdot 14^2$

$= 2814.9 \text{ ft}^2$

MANUFACTURING
A soup can is covered with the label shown. What is the radius of the soup can?

$L = 2\pi rh$

$\frac{125.6}{(2\pi 8)} = \frac{2\pi \cdot r \cdot 8}{2\pi \cdot 8}$

$2.5 in = r$

L

$15.7 \cdot 8 = 125.6$

$\frac{2\pi r}{2\pi} = \frac{15.7}{2\pi}$

$r = 2.5 in$