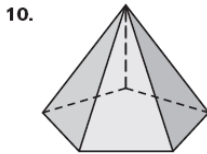
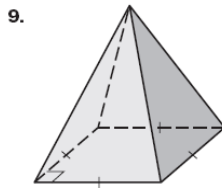
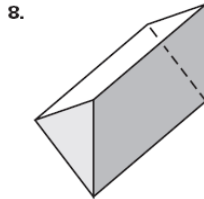
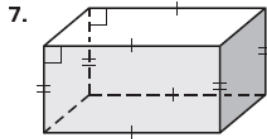


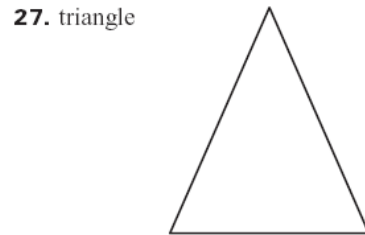
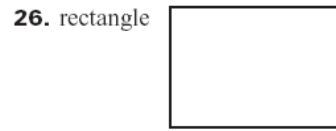
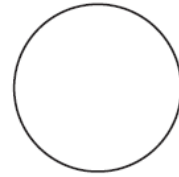
p.798 #1-27

1. tetrahedron, 4 faces; hexahedron or cube, 6 faces; octahedron, 8 faces; dodecahedron, 12 faces; icosahedron, 20 faces
2. The sum of the number of faces and vertices of a polyhedron is 2 more than the number of edges.
3. Polyhedron; pentagonal pyramid; the solid is formed by polygons and the base is a pentagon.
4. Polyhedron; hexagonal prism; the solid is formed by polygons and the two bases are congruent hexagons.
5. Not a polyhedron; the solid is not formed by polygons.
6. The bases are triangles; the solid is a triangular prism.



- | | |
|---------------|---------------|
| 11. 8 | 12. 5 |
| 13. 24 | 14. 20 |
| 15. 4, 4, 6 | 16. 5, 5, 8 |
| 17. 5, 6, 9 | 18. 5, 6, 9 |
| 19. 8, 12, 18 | 20. 8, 12, 18 |
21. A cube has six faces, and "hexa" means six.

22. concave 23. concave
 24. convex
 25. circle



Warm Up

1. Evaluate $2xy + 2yz + 2xz$ for $x = 9, y = 6,$ and $z = 4$.

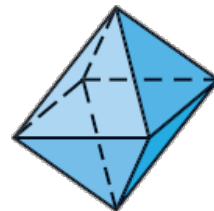
$$2 \cdot 9 \cdot 6 + 2 \cdot 6 \cdot 4 + 2 \cdot 9 \cdot 4 = 228$$

2. Find the circumference of a circle with radius 8 cm.

$$C = 2\pi r$$

$$2\pi \cdot 8 = 16\pi \text{ cm} \approx 50.3 \text{ cm}$$

3. Find the number of faces, vertices, and edges of the polyhedron.



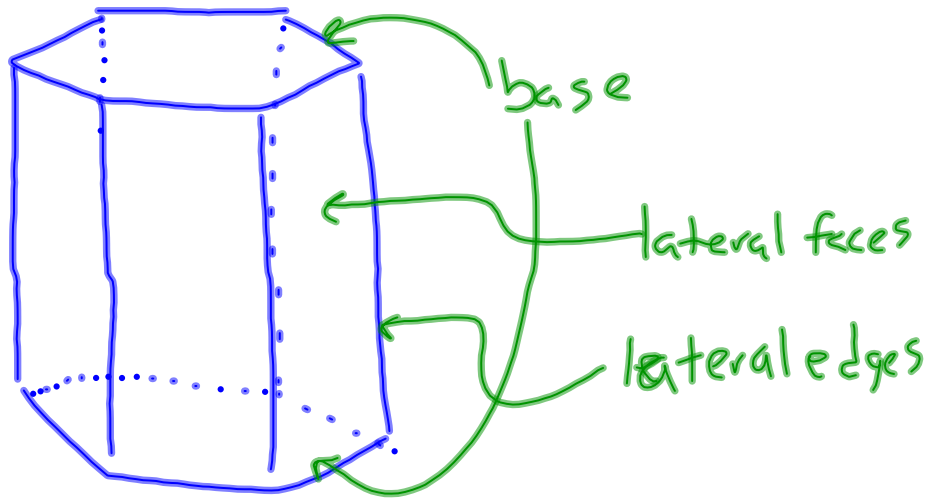
$$F = 4$$

$$V = 4$$

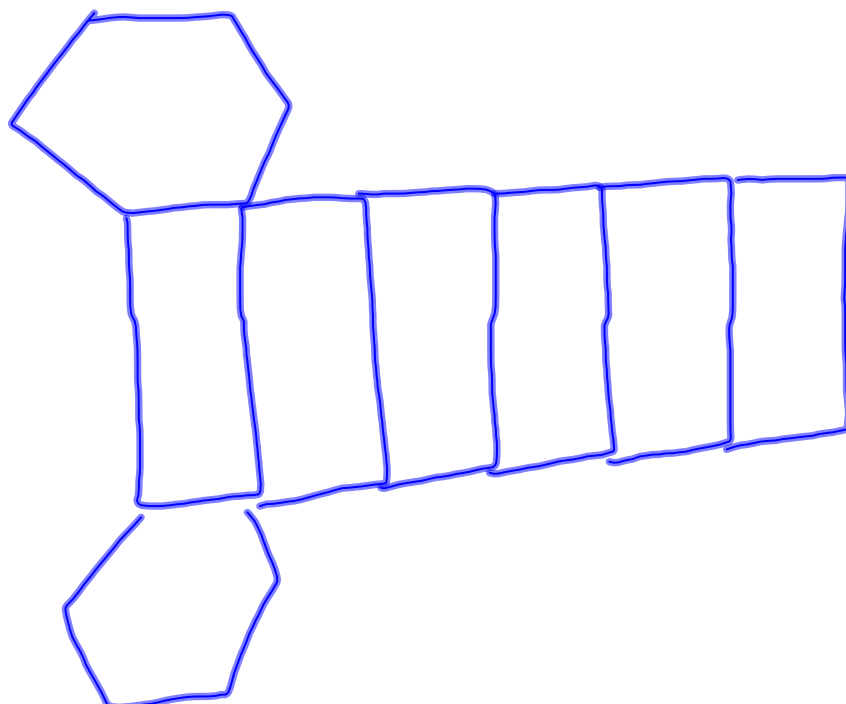
$$E = 6$$

12-2 Surface Area of Prisms and Cylinders

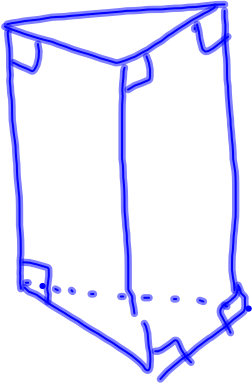
Prism -



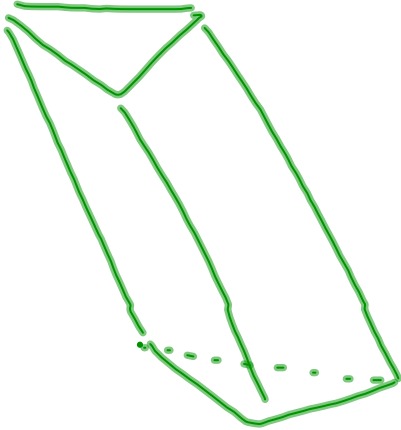
Net -



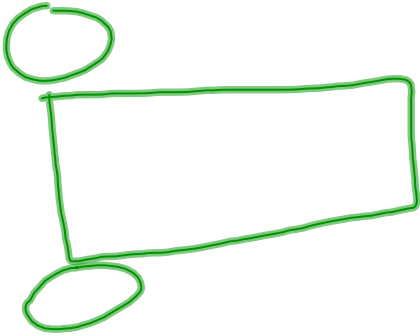
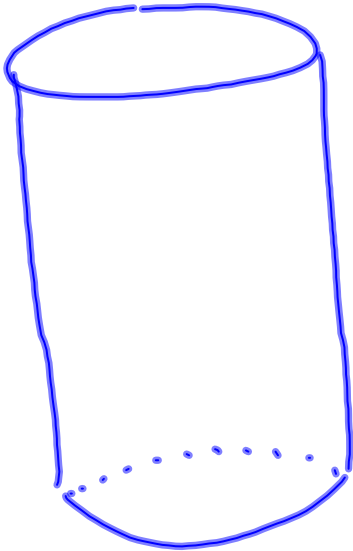
Right Prism



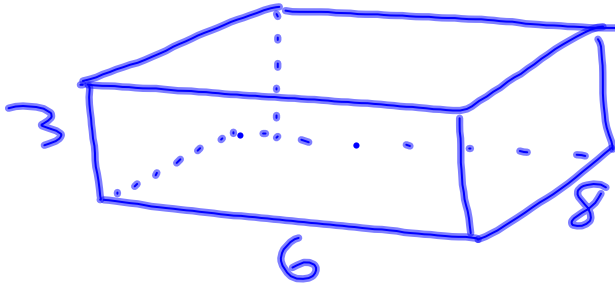
Oblique Prism



Cylinder -



Ex 1 Find the surface area of a rectangular prism with height 3 in., length 6 in., and width 8 in.



$$S = 2B + Ph$$

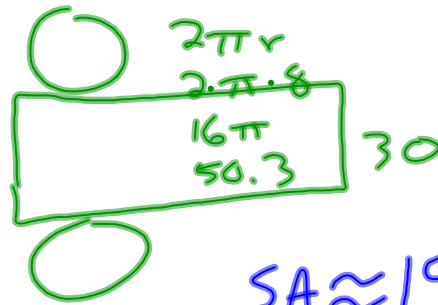
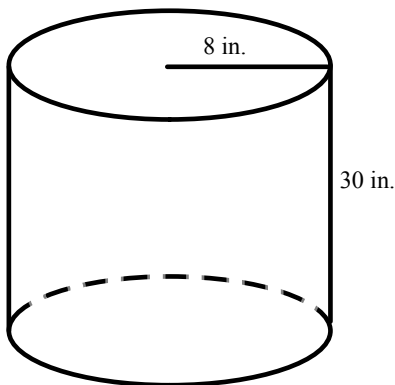
$$SA = 180 \text{ in}^2$$

Top: 48 Front: 18
 Bottom: 48 Back: 18
 Right: 24
 Left: 24

Surface area of a right prism -

Surface area of a right cylinder -

Ex 2 Find the surface area of the right cylinder.



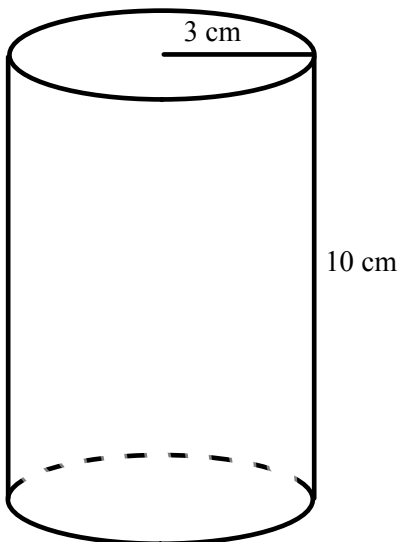
$$SA \approx 1910 \text{ in}^2$$

$$\text{Top: } \pi r^2 = \pi \cdot 8^2 = 64\pi \approx 201.1$$

$$\text{Bottom} = 64\pi = 201.1$$

$$\text{Side} = b \cdot h = 50.3 \cdot 30 \approx 1509 = 460\pi$$

Ex 3 Find the surface area of the right cylinder.



$$\text{Top: } \pi \cdot r^2 = 9\pi \approx \underline{28.3}$$

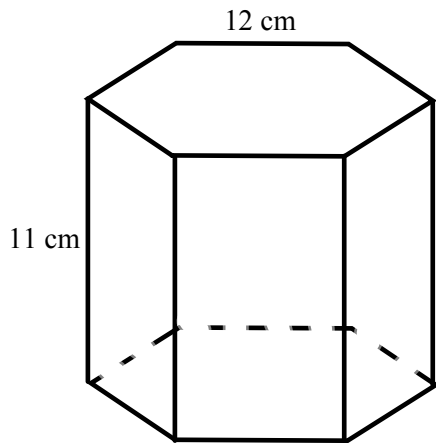
$$\text{Bottom: } \underline{9\pi} \approx \underline{28.3}$$

$$\text{Side: } b \cdot h$$

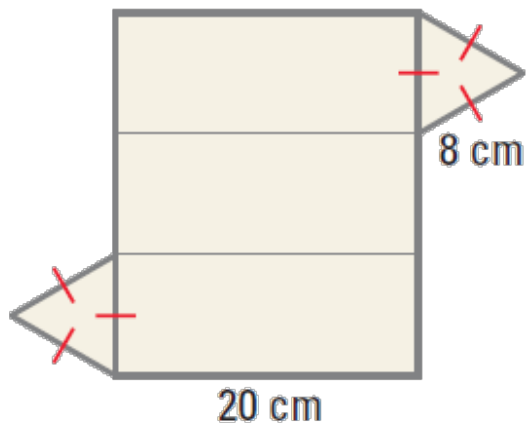
$$6\pi \cdot 10 = \underline{60\pi} \\ \approx \underline{188.5}$$

$$245.04 \text{ cm}^2$$

Ex 4 Find the surface area of the right regular hexagonal prism.



Ex 5 Find the surface area of the solid formed by the net. Round your answers to two decimal places.



Ex. 5 Find the height of the right cylinder that has a surface area of 262.64 cm^2 .

