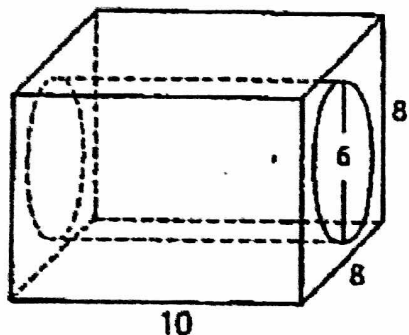


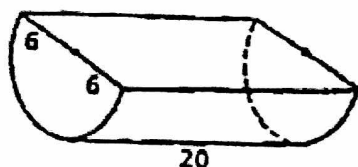
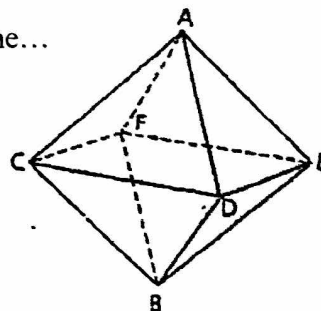
CHAPTER 11 EXTRA PRACTICE PROBLEMS

- ✓ 1. A tetrahedron has edge length 6. Find the height and surface area of the tetrahedron. $h = 2\sqrt{6}$
 $SA = 36\sqrt{3}$
- ✓ 2. When Hilda computed the volume and surface area of a cube, both answers had the same numerical value. Find the length of one side of the cube. 6
- ✓ 3. Find the surface area of the figure.



$$448 + 42\pi$$

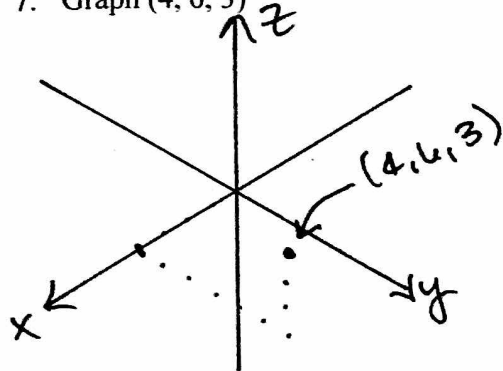
- ✓ 4. Each lateral edge of a regular square pyramid is 3, and the height of the pyramid is 1. What is the...
- Measure of a diagonal of the base? $\rightarrow 4\sqrt{2}$
 - Pyramid's slant height? $\rightarrow \sqrt{5}$
 - Area of the base? $\rightarrow 16$
 - Pyramid's lateral area? $\rightarrow 8\sqrt{5}$
- ✓ 5. A regular octahedron (shown at right) has edge length 6. What is the...
- Total surface area? $\rightarrow 72\sqrt{3}$
 - Distance from C to E? $\rightarrow 6\sqrt{2}$
 - Distance from A to B? $\rightarrow 6\sqrt{2}$
 - Shape of quadrilateral ACBE? $\rightarrow \text{square}$
- ✓ 6. Find the volume and surface area of the solid.



$$240 + 156\pi = SA$$

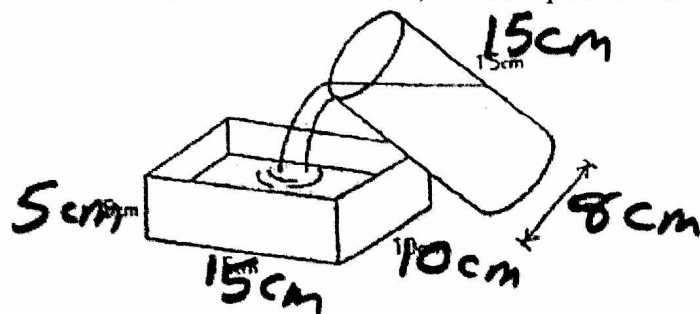
$$Vol = 360\pi$$

- ✓ 7. Graph $(4, 6, 3)$



- ✓ 8. Find the distance between $(2, 3, 7)$ and $(9, 10, 10)$ $\sqrt{107}$
- ✓ 9. Find the midpoint of the segment whose endpoints are $(2, 5, 3)$ and $(8, 8, 10)$ $(5, 6.5, 6.5)$
- ✓ 10. Find the endpoint of the segment whose midpoint is $(6.5, 9, 12.5)$ and with one endpoint $(9, 12, 15)$ $(4, 6, 10)$

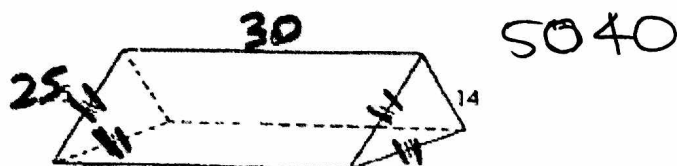
- ✓ 11. A cylindrical glass is full of water, which is poured into a rectangular pan. Will the pan overflow?



yes, it will overflow

- ✓ 12. Find the total area of a tetrahedron with side 9. $81\sqrt{3}$

- ✓ 13. Find the volume of the figure.

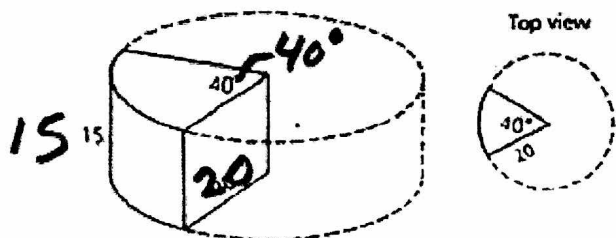


- ✓ 14. Find the circumference of a sphere with surface area 60π . $2\pi\sqrt{15}$

- ✓ 15. Find the height of a regular hexagonal prism with lateral area 1368 m^2 and base edges 12 m. 19 m

- ✓ 16. Find the surface area of a cone with height 20 and volume 1500π . 600π

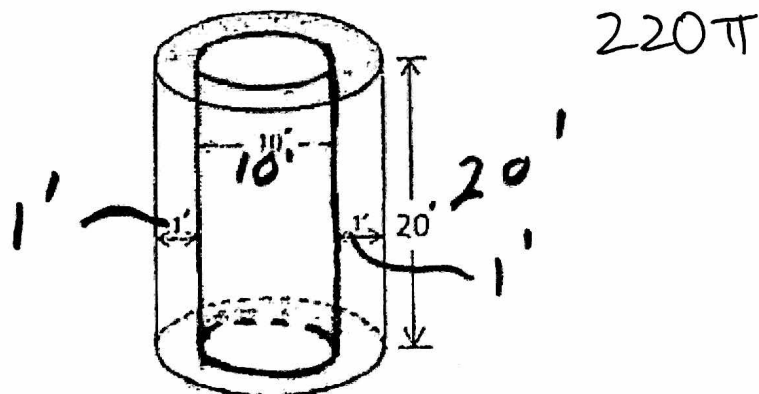
- ✓ 17. A wedge of cheese is cut from a cylindrical block, as shown. Find the surface area of the wedge.



$$\frac{1400\pi}{9} + 600$$

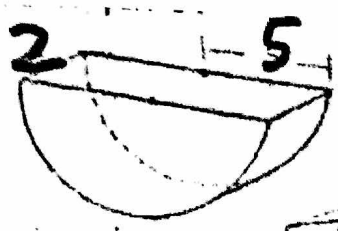
- ✓ 18. An ice cream cone is 9 cm deep and 4 cm across the top. A single scoop of ice cream, 4 cm in diameter, is placed on top. If the ice cream melts into the cone, will it overflow? NO

- ✓ 19. Find the volume of air between the 2 cylinders.



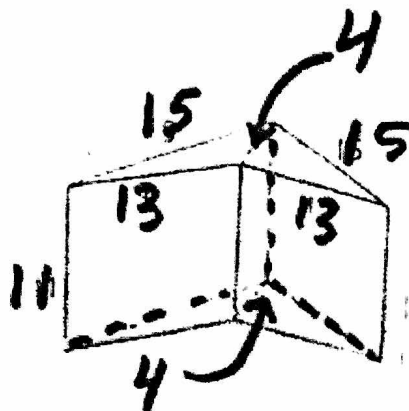
- ✓ 20. The lateral area of a right rectangular prism is 144 cm^2 . Its length is 3 times the width and its height is twice its width. Find the surface area. 180

1. Find the total surface area of this figure.



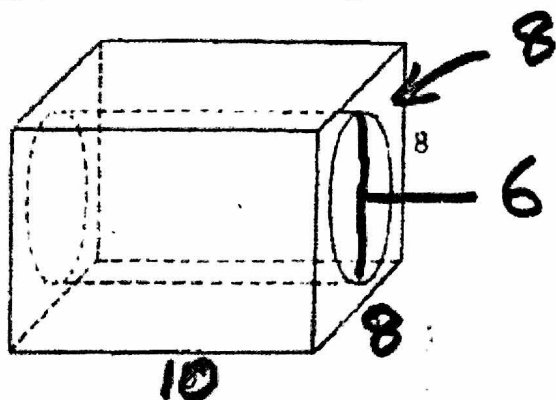
$$20 + 35\pi$$

✓ 22. Find the surface area of this right prism.



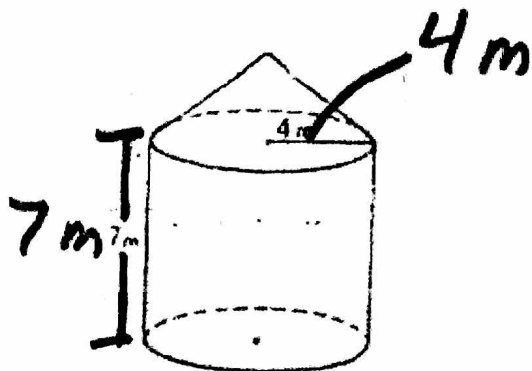
$$712$$

✓ 23. Find the surface area of the figure.



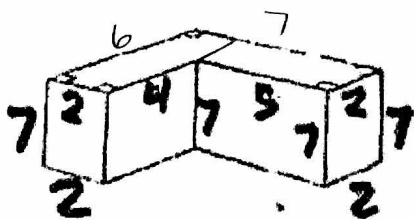
$$448 + 42\pi$$

✓ 24. The total height of the water tower shown is 10 m. If one liter of paint will cover an area of 10 m^2 , how many one liter cans of paint are needed to paint the tower?



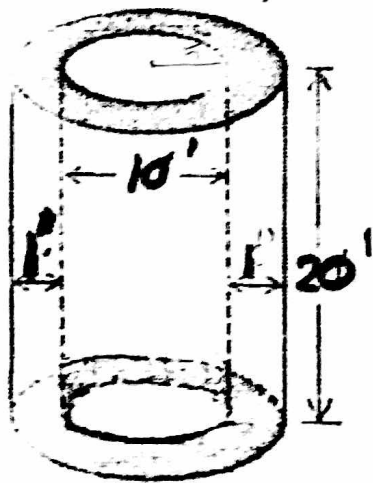
$$29 \text{ cans}$$

✓ 25. Find the surface area of the right prism.



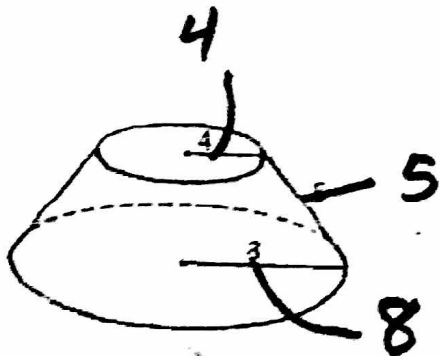
$$226$$

- ✓ 26. Find the surface area of the cylindrical shell.



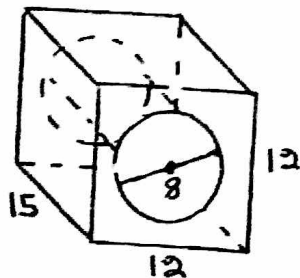
$$462\pi$$

- ✓ 27. Find the surface area of the right frustum.



$$140\pi$$

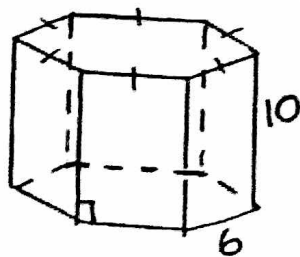
- ✓ 28. Find the surface area of the figure.



~~$$1008 + 88\pi$$~~

$$1008 + 88\pi$$

- ✓ 29. Find the surface area of the figure.

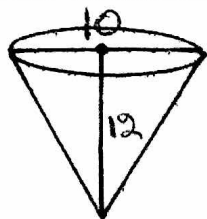


$$360 + 108\sqrt{3}$$

- ✓ 30. Find the volume of a cone with base diameter 28 and slant height 50. 3136π

- ✓ 31. Find the radius of a sphere whose surface area is $144\pi \text{ in}^2$. $r = 6$

2. Find the surface area of this cone.



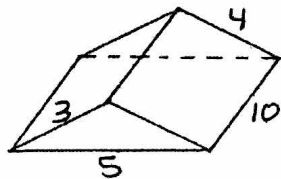
$$90\pi$$

✓ 33. Find the volume of a cylinder whose lateral area is 80π and whose height is 10. 160π

✓ 34. Given a regular square pyramid with slant height 10 and base edge 16, find its lateral area, surface area, and volume.

$$V = 512 \quad SA = 576 \quad LA = 320$$

✓ 35. Find the lateral area and surface area of this figure.



$$LA = 120$$

$$SA = 132$$

✓ 36. Find the surface area of a conical frustum whose bases have radii 2 and 6 and whose slant height is 8.

$$104\pi$$

✓ 37. Find the volume of an octahedron with side length 6. $72\sqrt{2}$

✓ 38. Find the surface area of a tetrahedron with side length 8.

$$64\sqrt{3}$$