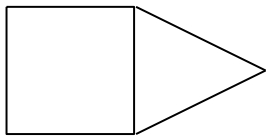
Unit 4 – Measuring Prism & Cylinders

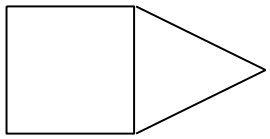
Grade 8 Mathematics
Exam Review

1. Louise draws a net for a pentagonal prism.
The diagram for the net has 1 pentagon and 4 rectangles.
What are the shapes missing from her drawing?

2. This is an incomplete net for a triangular prism. What shapes do you add to complete this net?

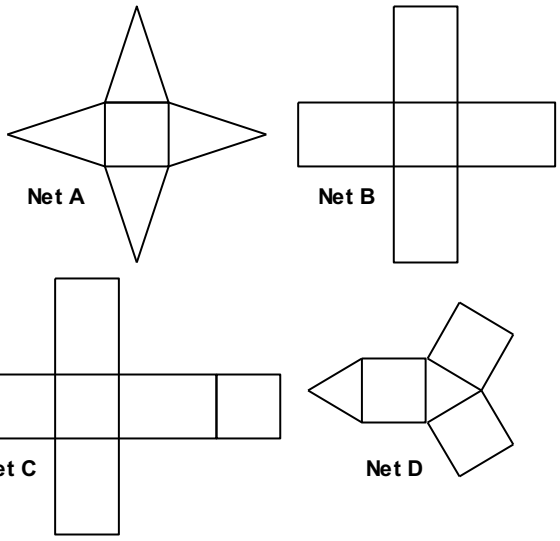


3. This is an incomplete net for a square pyramid. What shapes do you add to complete the net?

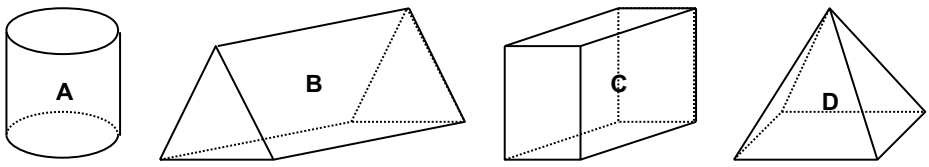


4. Jake wants to draw a net of a hexagonal pyramid. He has drawn 1 hexagon and 1 triangle.
What other shapes does he have to draw?

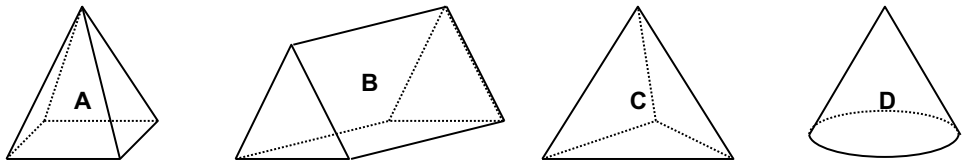
5. Which diagram is the net for a square pyramid?



6. Which object is NOT a prism?



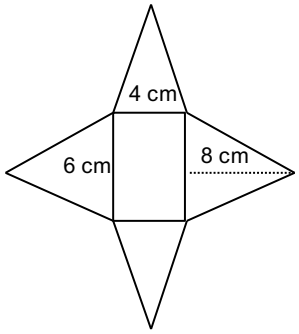
7. Which object is NOT a pyramid?



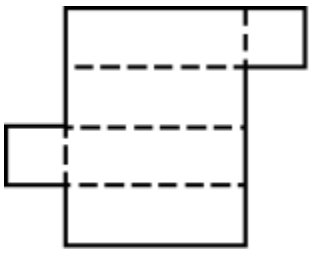
8. What shapes do you need to make a triangular prism?

9. What shapes do you need to make a hexagonal pyramid?

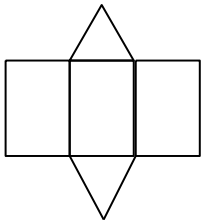
10. Name the polyhedron that can be formed from this net.



11. Name the polyhedron that can be made from this net.



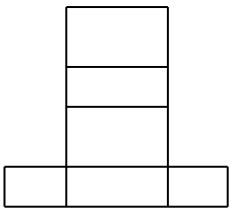
12. Name the polyhedron that can be made from this net.



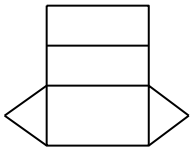
13. How many triangular faces are there in a hexagonal prism?

14. How many triangular faces are there in a pentagonal pyramid?

15. Name the polyhedron that can be made from this net.

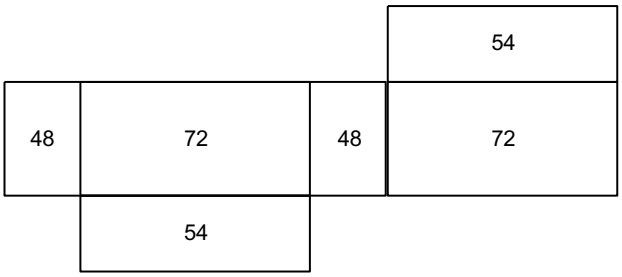


16. Identify the polyhedron that has this net.

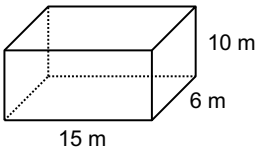


17. The area of one face of a cube is 25 cm^2. What is the surface area of the cube?

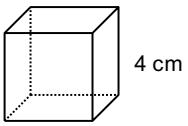
18. This is the net of a right rectangular prism. The area of each face, in square centimetres, is given. What is the surface area of the prism?



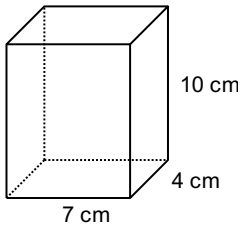
19. Find the surface area of this right rectangular prism.



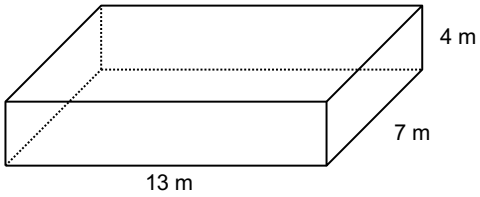
20. The length of one edge of this cube is 4 cm. What is the surface area of the cube?



21. Find the surface area of this right rectangular prism.

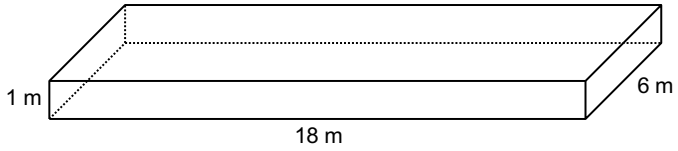


22. The Drama Club plans to paint the outside walls of this box to be used as a second level to their stage. Find the surface area of the box.



23. A right rectangular prism measures 11 cm by 8 cm by 3 cm.
What is the surface area of the prism?

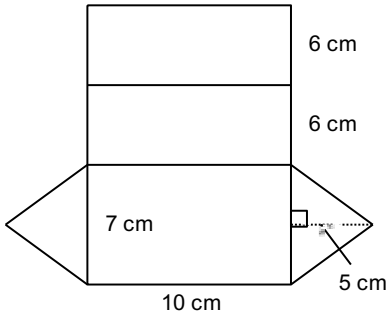
24. Find the surface area of this right rectangular prism.



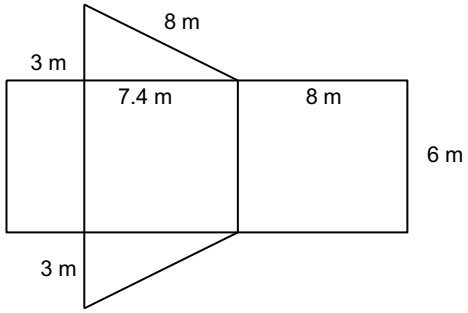
25. A square prism is 12 cm tall. The side length the square base is 7 cm.
What is the surface area of the prism?

26. A right rectangular prism is made from 19 centimetre cubes.
What is the surface area of the prism?

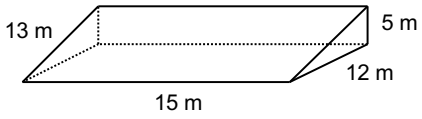
27. Calculate the area of this net of a right triangular prism.

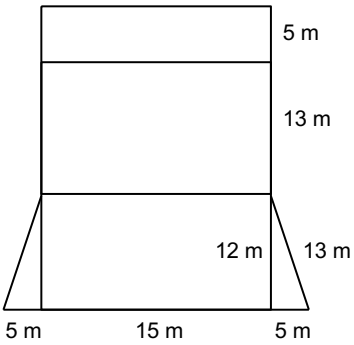


28. Calculate the area of this net of a right triangular prism.

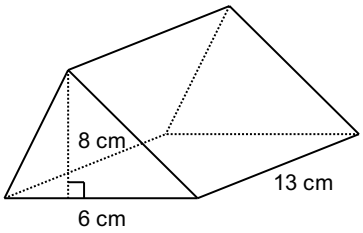


29. Use the net to find the surface area of the right triangular prism.

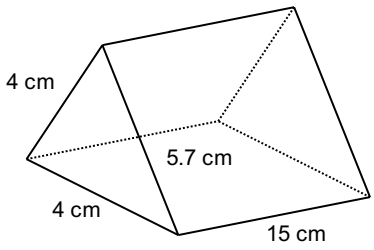




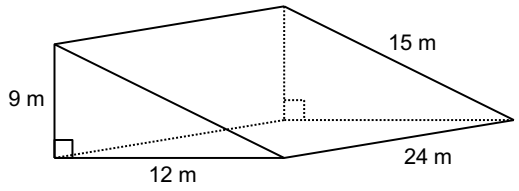
30. Calculate the area of the 2 triangular faces of this right triangular prism.



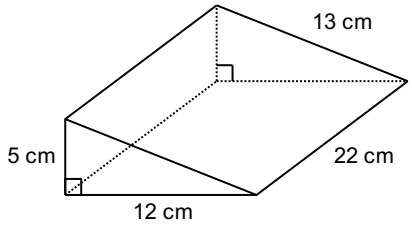
31. The area of each triangular face of this right triangular prism is 8 cm^2.
Calculate the total surface area of the prism.



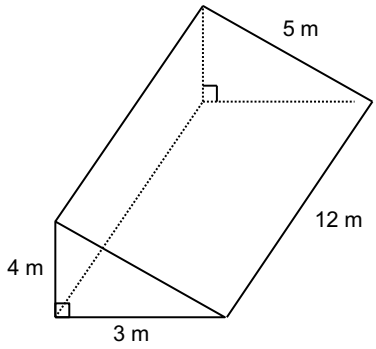
32. Calculate the surface area of this right triangular prism.



33. Calculate the surface area of this right triangular prism.



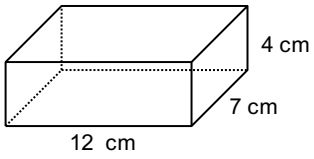
34. Calculate the surface area of this right triangular prism.



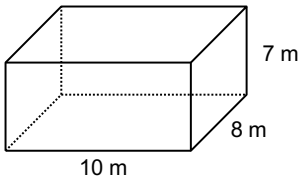
35. The base of a right triangular prism has an area of 9 cm^2 and a perimeter of 11 cm. If the height of the prism is 10 cm, find the total surface area of the prism.

36. The total area of the 3 rectangular faces of a right triangular prism is 56 cm^2. The total surface area of the prism is 68 cm^2. Find the area of each triangular face.

37. Find the volume of this rectangular prism.



38. Find the volume of this rectangular prism.



39. A right rectangular prism measures 9 cm by 7 cm by 10 cm. What is the volume of the prism?

40. The length of one edge of a cube is 5 cm. What is the volume of the cube?

41. A cube is made from 27 centimetre cubes. What is the volume of the cube?

42. The area of one face of a cube is 25 cm^2. What is the volume of the cube?

43. A square prism is 12 cm tall. The side length of the square base is 5 cm.
What is the volume of the prism?

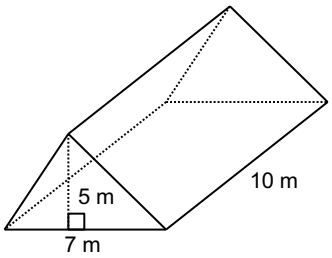
44. A right rectangular prism has length 6 cm, width 3 cm, and height 4 cm.
If the length is doubled, what is the new volume of the prism?

45. A concrete company makes 8 concrete beams, each measures 1 m by 1 m by 4 m.
What is the total volume of concrete used?

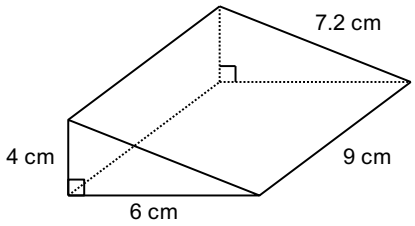
46. A full tray of fudge is shared equally among 24 students.
The tray measures 12 cm by 9 cm and is 2 cm deep.
How much fudge, to the nearest tenth of a cubic centimetre, does each student get?

47. A flower bed measures 1.5 m by 2.4 m and is filled with soil to a depth of 0.6 m.
What is the volume of soil in the flower bed?

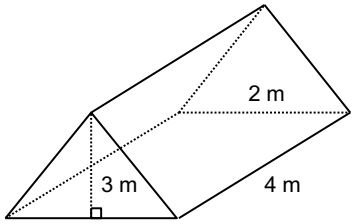
48. Find the volume of this triangular prism.



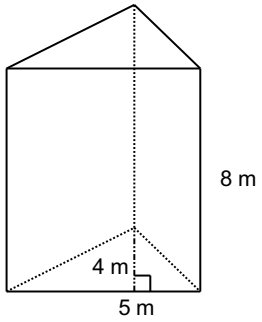
49. Find the volume of this triangular prism.



50. Find the volume of this triangular prism.



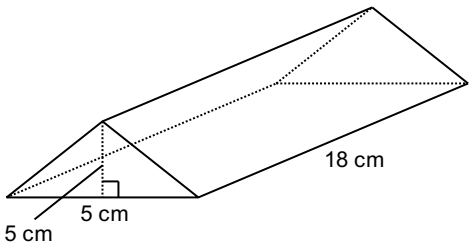
51. Find the volume of this triangular prism.



52. The area of the base of a right triangular prism is 9 cm^2 and the length of the prism is 10 cm. Calculate the volume of the prism.

53. The base of a triangular prism is a right isosceles triangle. Each leg of the triangle measures 2 cm. The length of the prism is 8 cm. Find the volume of the prism.

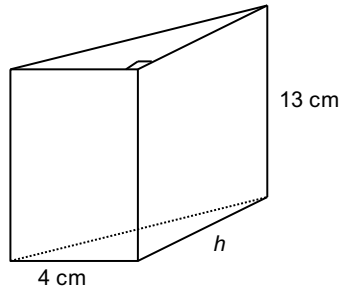
54. Find the volume of this triangular prism.



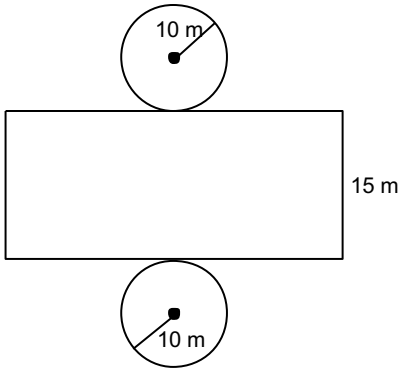
55. The area of the base of a right triangular prism is 14.5 cm^2 and the length of the prism is 6 cm. Calculate the volume of the prism.

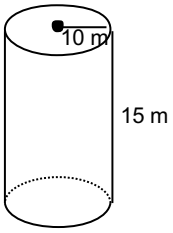
56. The base of a triangular prism is a right isosceles triangle.
The volume of the prism is 220.5 cm^3 and the length of the prism is 9 cm.
Find the measure of each leg of the base triangle.

57. The volume of this triangular prism is 78 cm^3. Find the value of h.

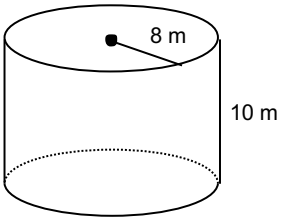


58. Use this net to find the surface area of the cylinder. Give the answer to the nearest square metre.

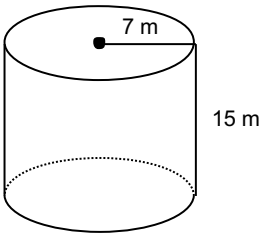




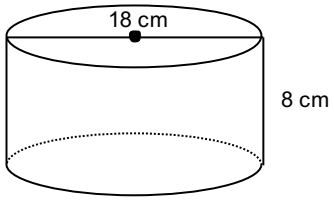
59. Find the surface area of this cylinder to the nearest square metre.



60. Find the surface area of this cylinder. Leave π in your answer.

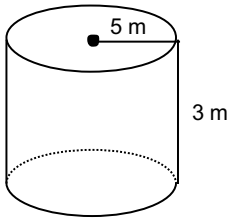


61. Find the surface area of this cylinder. Leave π in your answer.

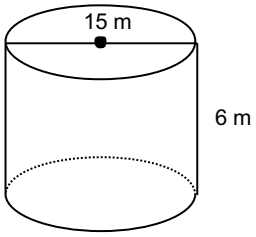


62. A cylinder has radius 11 mm and height 30 mm. What is the surface area of the cylinder?
Leave π in your answer.

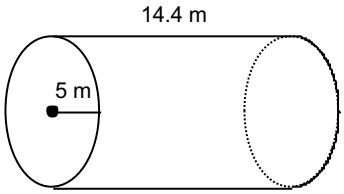
63. Find the surface area of this cylinder. Round your answer to the nearest tenth of a square metre.



64. Find the surface area of this cylinder. Round your answer to the nearest tenth of a square metre.



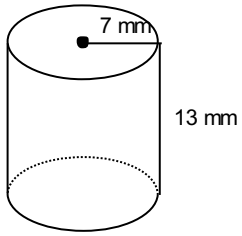
65. Find the curved surface area of this cylindrical tube.
Use $\pi = 3.14$ and round your answer to the nearest square metre.



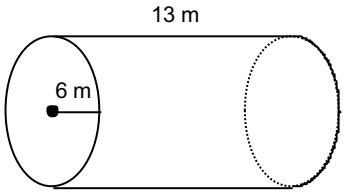
66. A paper cup has the shape of a perfect cylinder that is 6.9 cm tall and 3 cm across.
Find the area of paper needed to make the cup.
Use $\pi = 3.14$ and give the answer to the nearest square centimetre.

67. In pottery class, Felix made a 15-cm tall cylindrical vase that has radius 8 cm.
He wants to paint the outside of the vase.
How many square centimetres of surface will Felix have to paint?
Round your answer to the nearest square centimetre.

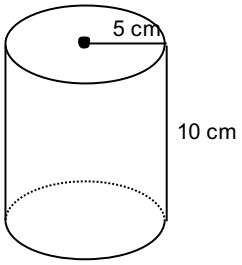
68. Find the volume of this cylinder. Leave π in your answer.



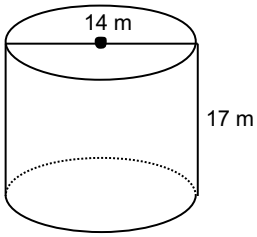
69. Find the volume of this cylinder. Leave π in your answer.



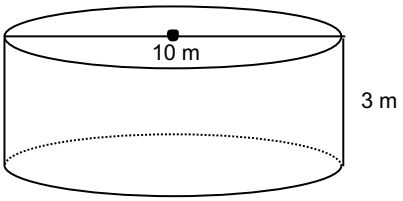
70. Find the volume of this cylinder. Round your answer to the nearest tenth.



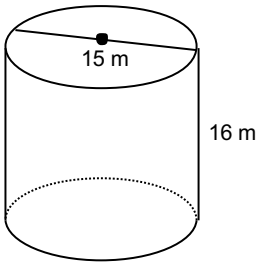
71. Find the volume of this cylinder. Round your answer to the nearest tenth.



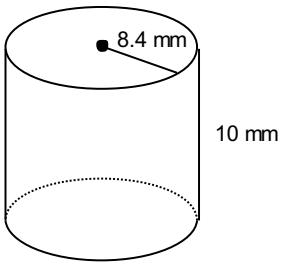
72. Find the volume of this cylinder. Use $\pi = 3.14$.



73. Find the volume of this cylinder. Round your answer to the nearest cubic unit.



74. Find the volume of this cylinder. Round your answer to the nearest cubic unit.



75. Find the volume of a cylinder with diameter 8 cm and height 4.1 cm.
Round your answer to the nearest cubic unit.

76. The height of a cylindrical oil storage tank is 6 m and it has diameter 22 m.
If the tank is full, how much oil does it contain? Round your answer to the nearest kL. (1 kL = 1 m^3)

Unit 4 - Answer Key

1. 1 pentagon and 1 rectangle
2. 1 triangle and 2 squares
3. 3 triangles
4. 5 triangles
5. Net A
6. Object D
7. Object B
8. 2 triangles and 3 rectangles
9. 1 hexagon and 6 triangles
10. Rectangular pyramid
11. Rectangular prism
12. Triangular prism
13. 0
14. 5
15. Rectangular prism
16. Triangular prism
17. 150 cm^2
18. 348 cm^2
19. 600 m^2
20. 96 cm^2
21. 276 cm^2
22. 342 m^2
23. 290 cm^2
24. 264 m^2
25. 434 cm^2
26. 78 cm^2
27. 225 cm^2
28. 132.6 m^2
29. 510 m^2
30. 48 cm^2
31. 221.5 cm^2
32. 972 m^2
33. 720 cm^2
34. **156 cm^2**
35. 128 cm^2
36. 6 cm^2
37. 336 cm^3
38. 560 m^3
39. 630 cm^3
40. 125 cm^3
41. 27 cm^3
42. 125 cm^3
43. 300 cm^3
44. 144 cm^3
45. 32 cm^3
46. 9 cm^3
47. 2.16 m^3
48. 175 m^3
49. 108 cm^3
50. 12 m^3
51. 80 m^3
52. 90 cm^3
53. 16 cm^3
54. 225 cm^3
55. 87 cm^3
56. 7 cm
57. 3 cm
58. 1571 m^2
59. 905 m^2
60. 308π m^2
61. 306π cm^2
62. 902π mm^2
63. 251.3 m^2
64. 636.2 m^2
65. 452 m^2
66. 72 cm^2
67. 955 cm^2
68. 637π mm^3
69. 468π m^3
70. 785.4 cm^3
71. 2616.9 m^3
72. 235.5 cm^3
73. 2827 m^3
74. 2217 mm^3
75. 206 cm^3
76. 2281 kL