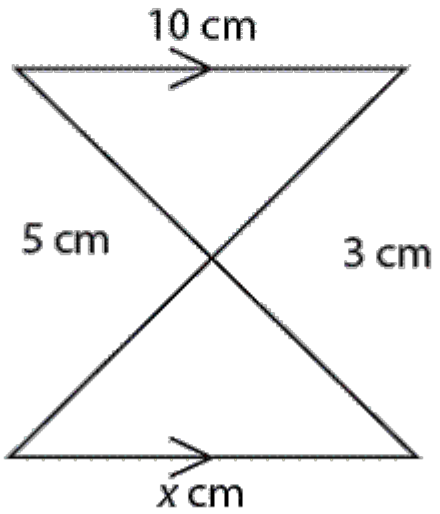
PRACTICE EXERCISE ON GEOMETRY AND MENSURATION

At the end of the chapter, students should be able to:
1. State the properties of plane shapes.
2. Calculate the area of plane shapes.
3. State the properties of solids.
4. Calculate the volumes of some solids.

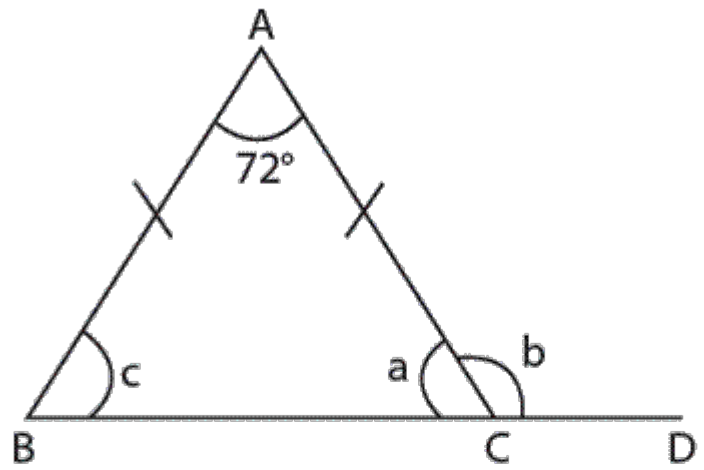
Solve the following:

1. What is the name given to a triangle whose three sides are equal in length?
2. Calculate the slant height of a cone 4 cm high with a base diameter of 6 cm.
3. What is the circumference of a circle with diameter 14 cm? $\left(\text{take } \pi = \frac{22}{7}\right)$



4. Calculate the value of x in the diagram above.

5. Calculate the unknown angles a and b in the diagram below.



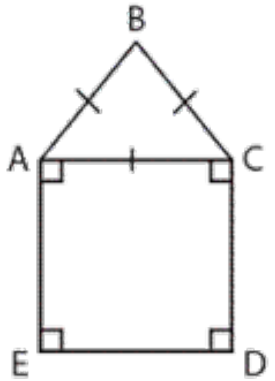
6. The exterior angles of a quadrilateral are $x°$, $(x + 15)°$, $(2x + 5)°$ and $(3x - 10)°$. Find the value of x.

7. Find the length of side of a cube whose volume is 125 cm^3.

8. The sum of the angles of a polygon is 180°. How many sides does the polygon have?

9. How many lines of symmetry does a kite have?

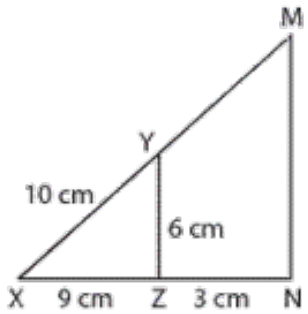
10.



Above is an irregular polygon ABCDE. If $\overline{AB} = \overline{BC} = \overline{AC}$ and ACDE is a rectangle, find the sum of the interior angles of the polygon.

11. How many vertices does a cube have?

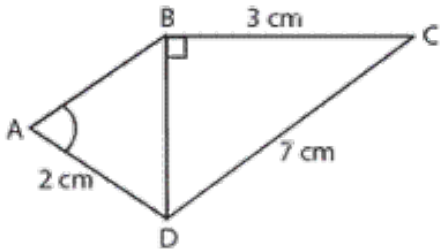
12. Calculate $|MN|$ in the figure below.



13. Find the length of the diagonal of a rectangle whose length and breadth are 8 cm and 6 cm respectively.

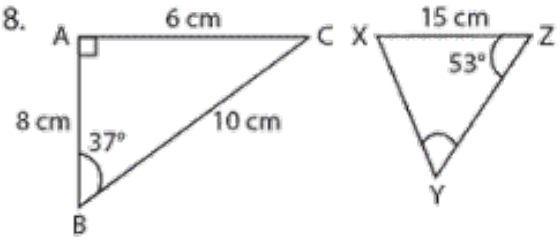
14. Calculate to the nearest whole number, the perimeter of a circle whose radius is 6 cm $\left(\pi = \frac{22}{7}\right)$.

15. Find the length $\overline{AB}$ in the diagram below.



16. The length of a diagonal of a rectangle 3 cm wide is 5 cm. Find the area of the rectangle.

17. An interior angle of a regular polygon is 140°. How many sides does the polygon have?

18. 

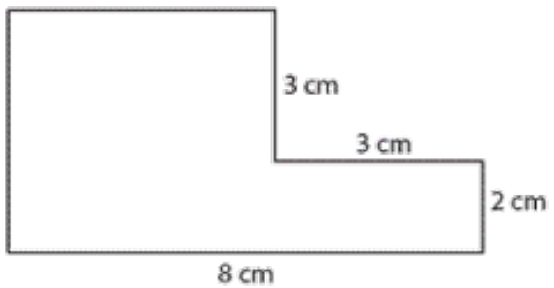
Find the ratio of the corresponding sides in the triangle above.

19. What is the value of each exterior angle of a regular pentagon?

20. Calculate, correct to one decimal place, the curved surface area of a cone whose base radius is 3 cm and height = 4 cm $\left(\text{take } \pi = \frac{22}{7}\right)$.

21. The slant height of a cone is 10 cm. If its vertical height is 6 cm, find the base radius of the cone.

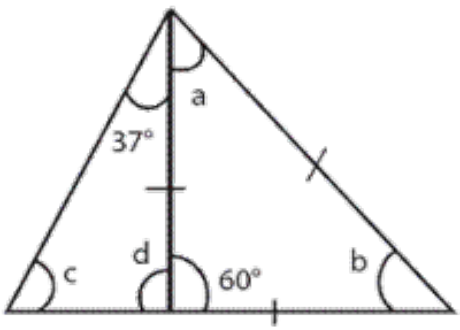
22. Find the area of the diagram shown below:

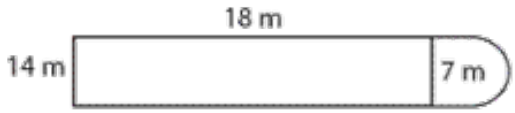


23. The angles of a pentagon are $x°$, $(x + 5)°$, $(x + 20)°$, $(x + 25)°$ and $(x + 30)°$. Find x.

24. Find the perimeter of a square whose area is 400 cm².

25. Find the area of a circle whose diameter is 9 cm $\left(\text{take } \pi = \frac{22}{7}\right)$.
26. Find the volume of a sphere whose radius is 7 cm to the nearest cm^3.
27. The sum of the interior angles of a polygon with n sides is 900°. Find the value of n.
28. Find the total surface area of a cube with length 15 cm.
29. Four angles of a pentagon are 100° each. Find the fifth angle.
30. A rectangle is 8.6 cm wide. If its perimeter is 57.2 cm, calculate its length.
31. Find the total surface area of a cylinder with height 8 cm and base radius 7 cm.
32. The perimeter of a triangle is 36 cm. If the sides are in the ratio 2:3:4, find the side with the smallest length.
33. Find the area of a semi-circle of radius 7 cm. $\left(\pi = \frac{22}{7}\right)$.
34. What is the value of x, if the sum of angles at a point is $(2x + 60)°$?
35. What name is given to a triangle with only two sides equal in length?
36. What is the size of the angle marked c in the diagram below?



37. 

Calculate the perimeter of the shape above $\left(\text{take } \pi = \frac{22}{7}\right)$

38. Which of the following has nine edges?
    (a) cuboid
    (b) cylinder
    (c) cube
    (d) triangular prism
    (e) triangular pyramid

39. If two adjacent angles on a straight line are 66° and $x°$, what is the value of x?

40. What is the name of the shape that is obtained diagonally by cutting a square into two equal sizes?

41. The area of a triangle is 72 cm^2. Given that the base length is 18 cm, find the height of the triangle.

42. What is the name given to two angles whose sum is equal to 90°?

43. Two angles of a triangle ABC are 46° and 67°. Calculate the third angle. What type of triangle is the triangle ABC?

44. Find the side of a square whose area is 361 cm^2.

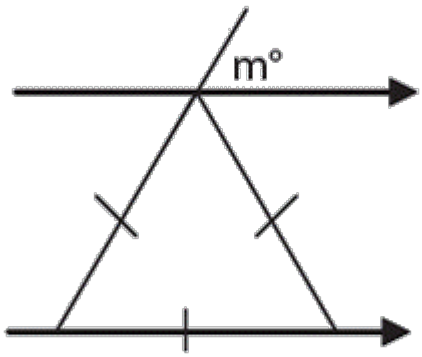
45. A cylinder has a volume of 154 cm^3 and a diameter of 7 cm. Find the height of the cylinder.

46. The height of a right-angled triangle is 7 cm and its hypotenuse is

25 cm. What will be the area of the triangle?

47. What is the formula for calculating the curved surface area of a cylinder?

48.



Calculate the value of *m* from the diagram above.

49. How many lines of symmetry does a parallelogram have?

50. Find the area of the shaded portion in the diagram below.