

SECTION I

40 marks

Attempts Questions 1-10

Allow about 10 minutes for this section

Instructions

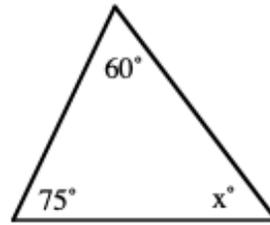
- Answer the questions in the space provided. These spaces provide guidance for the expected length of response
 - Show all relevant working in questions involving calculations.
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1. In a triangle, if the second angle is one-half times the sum of the first angle and 24 and the third angle is the sum of thrice the first angle and 6, find the three angles of the triangle.

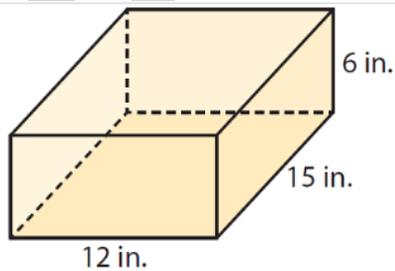
2. If the length of a rectangle is 13 cm less than thrice the width and the perimeter is 90 cm long, find its length and width.

3. The perimeter of a square is 20 m. What is the area of the square?

4. Calculate the third angle in the triangle.



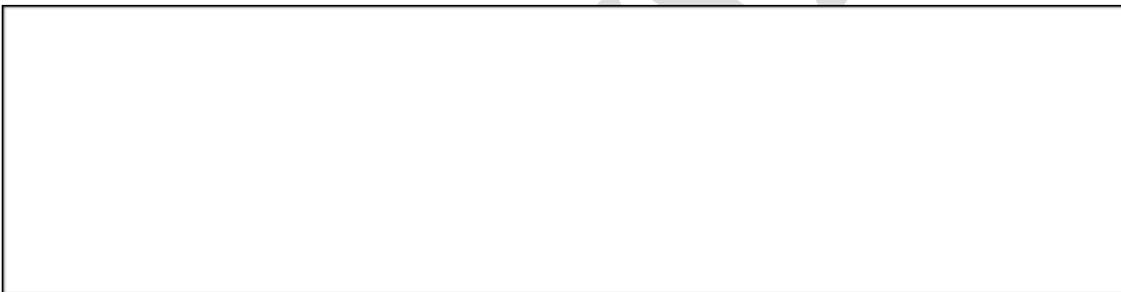
5. Matt is making a jewelry box of wood in the shape of a rectangular prism. The jewelry box will have the dimensions shown below. The cost of painting the exterior of the box is \$0.75 per square inches. How much does Matt have to spend to paint the jewelry box?



6. A rectangular fish tank 53 centimeters width by 24 centimeters by 30 centimeters height is $\frac{2}{5}$ full of water. Find the volume of water needed to fill the tank completely.



7. In a triangle, if the second angle is 10° greater than the first angle and the third angle is 16° greater than the second angle, find the three angles of the triangle.



8. The midpoint of a segment is $(4, 8)$. If one endpoint is $(5, 8)$, what is the other endpoint?



9. Angel was determining the dimension of her jewelry box. She read on the box that the total volume was 900 cubic centimeters. Angel found that it was 5 centimeters wide and 15 centimeters high, what was the length?



10. Marcus is making a wooden birdhouse. The birdhouse is a prism with bases that are pentagons, and has the dimension shown in the diagram. The volume of the prism is 720 cubic inches. Find the height of the prism.

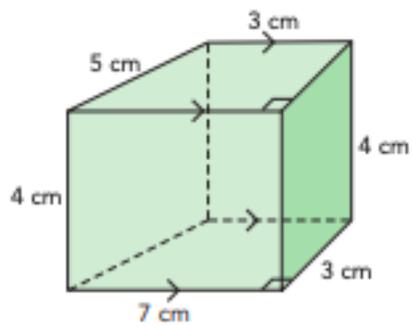


11. In a triangle, if the second angle is 30% more than the first angle and the third angle is 30% less than the first angle, then find the three angles of the triangle.

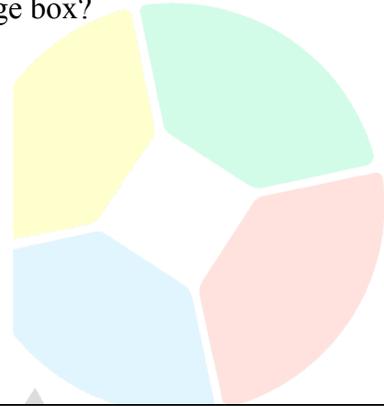
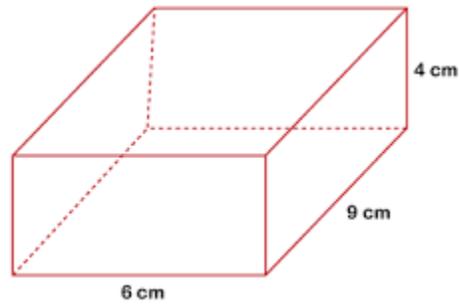


12. If the angles of a triangle in the ratio $1 : 6 : 11$, then find the angles

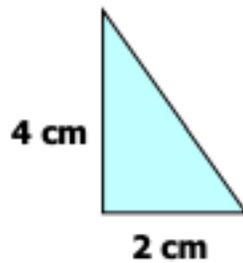
13. Find the volume of the block of wood.



14. Kaye is painting a notebook storage in the shape of a rectangular prism (dimension shown below). If the cost of painting of the exterior of the box is \$2.0 per square cm. How much does Kaye have to spend to paint the storage box?

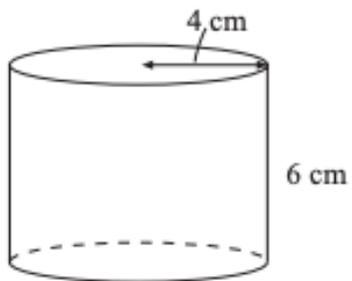


15. Calculate the area of the right triangle below.

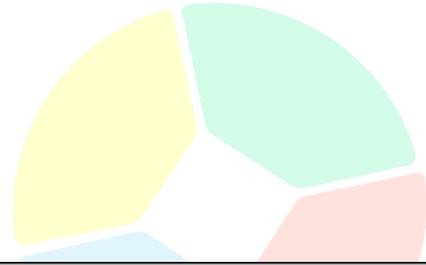
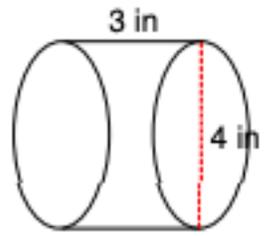


16. Calculate the area of a circle with a diameter of 10m.

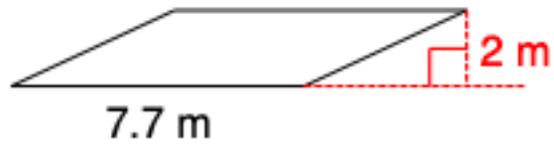
17. Calculate the total surface area of the cylinder shown.



18. Find the volume of the figure.



19. Find the area of the figure below.



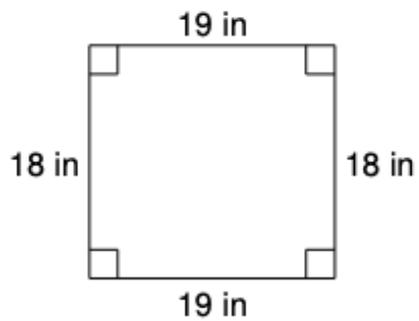
20. In the store, jewelry is in a glass display case in the shape of rectangular prism. It is 12 inches long, 9 inches high and has a volume of 864 cubic inches. Find the width of the rectangular display case.



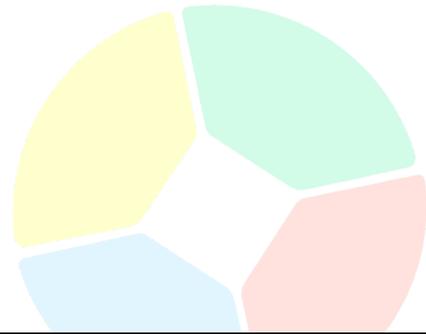
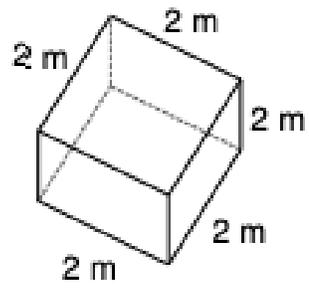
21. Find the volume of a cone with a diameter 14 yd and a height of 14 yd.



22. Find the area of the figure below.



23. Find the volume of the figure.

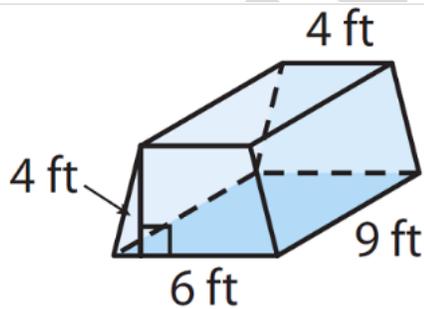


24. Find the area of the figure.



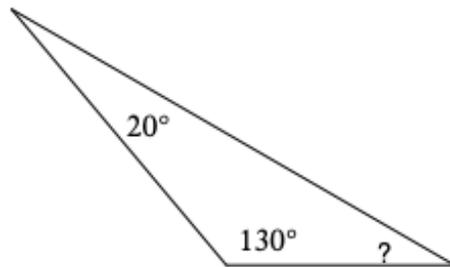
25. A square prism of height 11 inches has a volume of 539 cubic inches. Find the length of each side of the square base.

26. Anne is setting up her tent. Her tent is in the shape of a trapezoidal prism shown below. How many cubic feet of space are in her tent?



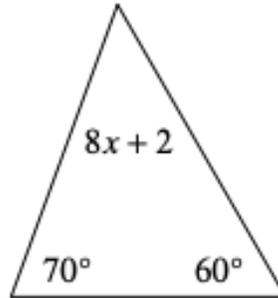
27. Kim says that the volume of a cylindrical vase that has a diameter of 10 cm and a height of 12 cm is about $4\,396\text{ cm}^3$. Is Kim correct? Explain.

28. Find the measure of the angle indicated.



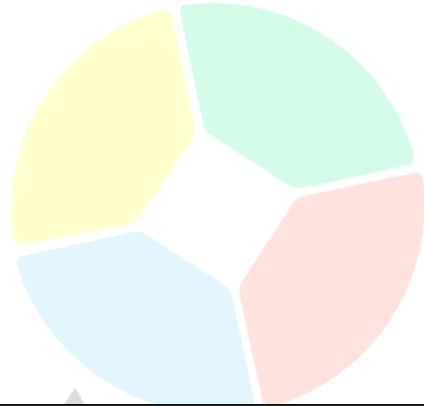
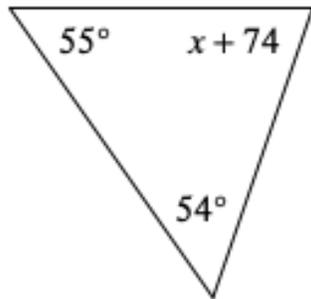
29. Calculate the volume of a rectangular prism measuring 10 cm and 7 cm along the base and 12 cm tall.

30. Solve for x in the following figure.

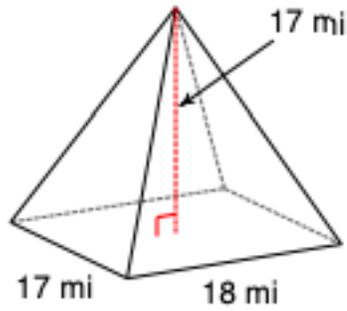


31. The second angle of a triangle is double the first. The third angle is 20° less than the first angle. Find the three angles.

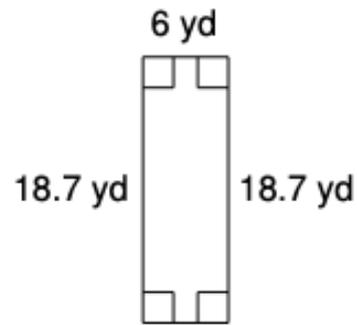
32. Solve for x in the figure below.



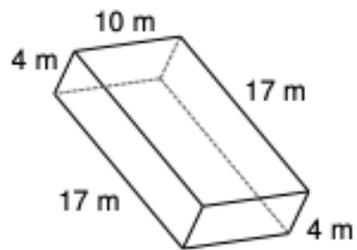
33. Find the volume of the figure below.



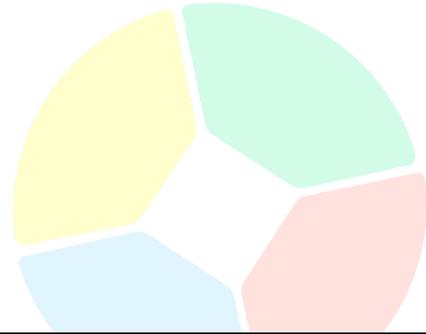
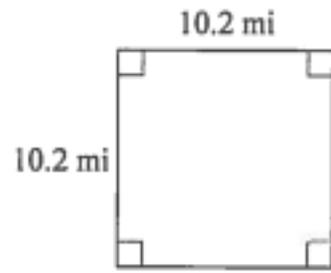
34. Find the area of the figure below.



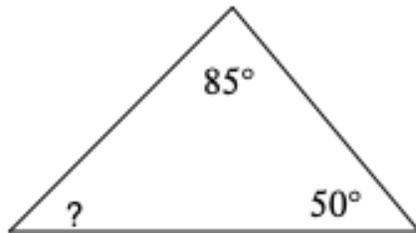
35. Calculate the volume of the figure below.



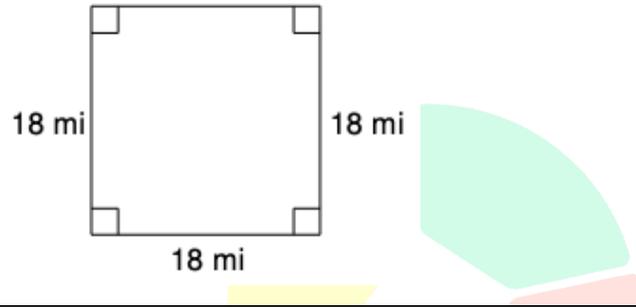
36. Find the perimeter of the figure below.



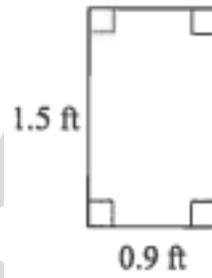
37. Find the unknown angle of the triangle below.



38. Find the area of the figure below.



39. Find the perimeter of the figure below.



Sci

40. A right circular cylinder has a volume of 700 cubic inches and a height of 7 inches. What is the radius of the cylinder?

Scholarly