

Strand end test sample questions

1. Given a right-angled triangle with legs of lengths 5 cm and 12 cm, find the area. Investigate how the area changes when one leg is fixed, and the other varies.
2. A rectangular garden has a length of 15 meters and a width of 8 meters. Calculate the perimeter of the garden. Investigate how the perimeter changes when the length or width is altered while maintaining the area constant.
3. Consider a rectangle with a fixed perimeter of 30 cm. Investigate the possible dimensions of the rectangle and find the area. Explore how different combinations of length and width affect the area.
4. A polygon has a fixed perimeter of 24 cm. Investigate the various shapes this polygon could take and determine the maximum and minimum possible areas for this fixed perimeter.
5. A rectangular prism has a base area of 25 square units and a height of 8 units. Calculate the volume. Investigate how changes in the base area or height affect the volume.
6. Compare the volumes of two rectangular prisms, one with a base area of 20 cm^2 and a height of 6 cm, and the other with a base area of 25 cm^2 and a height of 4 cm.
7. Given a semi-circle with a diameter of 10 meters, calculate its area. Clearly show the steps involved in finding the area.
8. Determine the area of a quarter circle with a radius of 6 inches. Explain how the formula for the area of a quarter circle is derived from the formula for a full circle.
9. If the area of a circle is 154 square units, calculate the radius. Use the formula for the area of a circle and show all the steps in your solution.
10. Consider a circle with a radius of 5 cm and a semi-circle attached to it. Find the combined area of the circle and the semi-circle.

