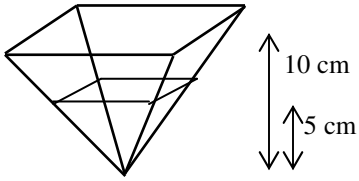
= Year 12 = Geometry&Trigonometry = Worksheet 4

1. A cylindrical container (radius 12 cm, height 25 cm) is filled with water to a depth of 23 cm. A spherical solid (radius 6 cm) is placed in the water and sunk to the bottom. Find the volume of spilled water.

2. Refer to Q1. What is the volume measure of spilled water if all the given length measures are doubled?

3. A closed container in the shape of an inverted square-base pyramid is filled with water to a depth of 5 cm. Find the ratio of the volume of water to the volume of air in the container.



4. Refer to Q3. If the area of the base is $100cm^2$, find the total surface area of the pyramid.

5. A house is $\sqrt{3}$ km west and 1 km north of train station A. Find the location (distance in km, three figure bearing for direction) of the house from train station A.

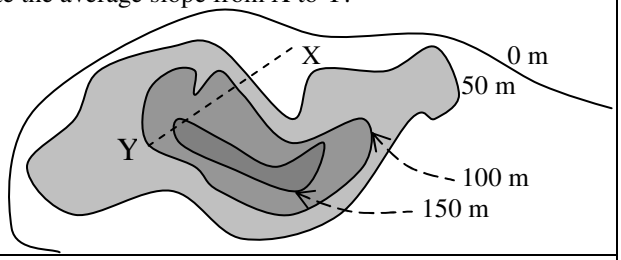
6. Refer to Q5. State the location of train station A from the house.

7. Refer to Q5 and Q6. The same house is $\sqrt{2}$ km NE of train station B. Find the location (distance in km, three figure bearing for direction) of train station B from train station A.

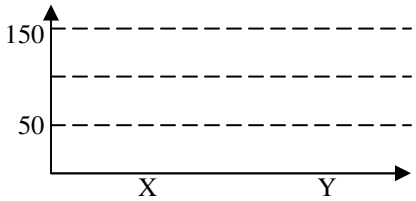
8. Refer to Q5, Q6 and Q7. Find the shortest distance from the house to the straight rails between station A and station B.

9. Find the area (in hectares) of the triangular region bounded by straight lines joining the house, station A and station B.

10. The horizontal distance between X and Y is 120 m. Estimate the average slope from X to Y.



11. Refer to Q 10. Draw the profile of the vertical cross-section of the hill between X and Y.



Numerical, algebraic and worded answers.

1. 0
2. 0
3. 1 : 7
4. 323.6 cm^2
5. 2 km 300°T
6. 2 km 120°T
7. 2.732 km 270°T
8. 1 km
9. 136.6 hectares
10. 0.75