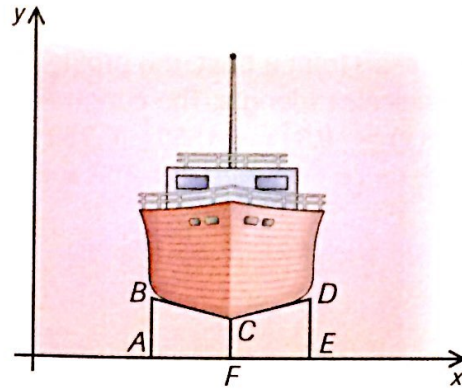
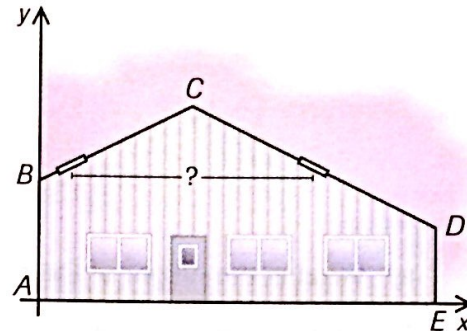


15. A boat is placed on a steel support frame so that its hull can be repaired. This situation is depicted in the graph on the right, with the axes scaled in metres. Beams BC and CD correspond to the function whose equation is $y = \frac{3}{5}|x - 8| + 1.55$. Beams AB and DE each measure 3 m. What is the total width of the steel support frame AE ?

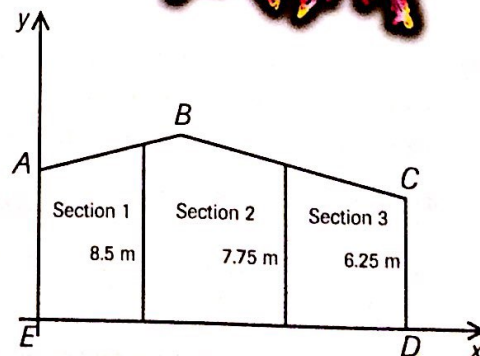


16. The side of a garage is shown in the graph on the right, with the axes scaled in metres. Each sloping side of the roof corresponds to the curve associated with the rule $y = -\frac{1}{2}|x - 4| + 6$. The height of the wall DE equals 2.5 m. A circular light fixture is installed on each sloping side of the roof such that the centre of each light is 4.5 m from the ground.

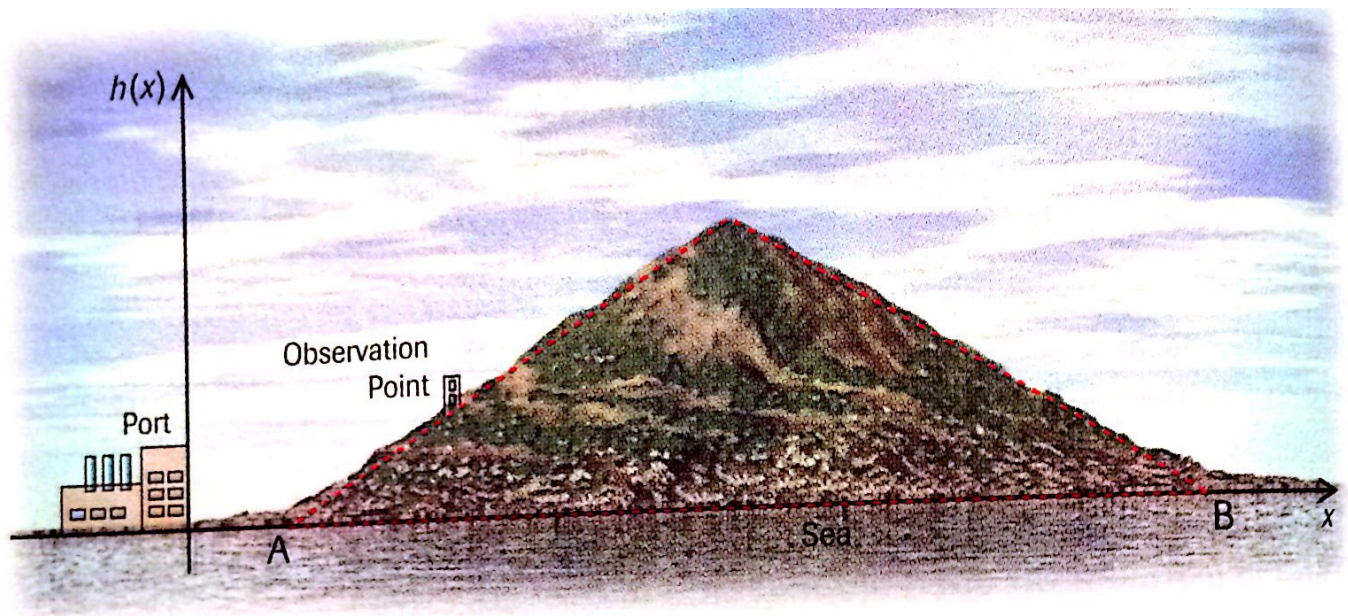


- a) What is the height of the wall AB ?
- b) What is the width of the garage AE ?
- c) What is the distance between the centres of the two lights?
17. In mid-March a group of meteorologists records the total accumulation of snowfall over a 36 h period, using an observation deck designed specifically for that purpose. An analysis of the data establishes that the depth of the snow, in centimetres, varies according to the rule $A(t) = \frac{2}{3}|t - 15| + 6$ where t is the time in hours.
- a) On the deck, what was:
- The minimum depth of the snow?
 - The maximum depth of the snow?
- b) At what time was the total depth of the snow:
- 14 cm?
 - 12 cm?
 - 10 cm?
- c) For how many hours did the snow's depth increase?

18. A theatre troupe requires stages of various dimensions for its performances. The largest of these stages is composed of three sections. The graph on the right, scaled in metres, shows an overhead view of this stage. Sides AB and BC belong to the function whose rule is $y = -\frac{1}{4}|x - 7| + 9$. Find the area of each section.



Computer-coloured image of a snowflake. Snowflakes that crystallize slowly in still air and at temperatures close to the freezing point have a hexagonal symmetry.



- a)** What is the height of the mountain?
- b)** How far are points A and B from the port?
- c)** Tourists can visit the observation post located on the west side of the mountain, at an altitude of 300 m. What distance must they travel to get to the observation post from the foot of the mountain at A?

THINK TANK