Work Sheet – 02 (Mathematics) for class – Nine (04.10.2020)
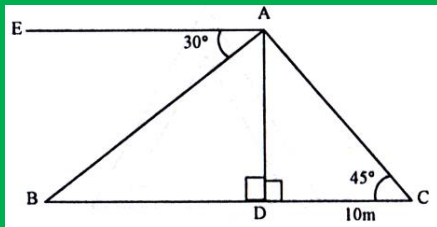## Chapter – Sixteen, Exercise - 16.1 Mensuration
Creative Questions:

1.

**In the figure AE ǁ BC, AD ⊥ BC, angle of elevation ∠ACD = 45° and DC = 10 metre.** **[J.B.- 17]**
  a) Define angle of elevation and angle of depression.
  b) Find the length of side AB.
  c) Find the perimeter of ΔABC.

2. **The area of an equilateral triangle is increased by $\sqrt{3}$ square metre when the length of each side of the triangle in increased by 1 metre.** **[Ctg.B.- 16]**
  a) Construct the triangle and write down the formula of determining the area of the triangle.
  b) Find the length of the sides of the triangle.
  c) If the area of the triangle will be increased by $7\sqrt{5}$ square metre then what length of each side of the triangle should be increased?
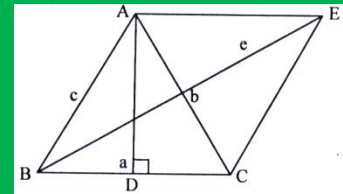
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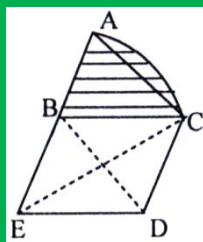
In the adjoining figure ABC is an equilateral triangle and BCDE is a rhombus.

  a) Find the area of a circular segment ABC if AC = 3 metre.
  b) The area of ΔABC increases by $3\sqrt{3}$ square metre when the length of each side increased by 1 metre then show that, AB = 5.5 metre.
  c) Find the area of the rhombus BCDE.

4.

In the figure ABC and ABCE is a triangle and parallelogram respectively. The length of BC, CA, AB and BE are a, b, c and e respectively the height and the area of ΔABC are h and R respectively.
  a) If b = c then show that, $R = \frac{a}{4}\sqrt{4c^2 - a^2}$.
  b) If a = b = c and a, b, c be increased by 2 metre then R be increased by $4\sqrt{3}$ metre. Find the value of R.
  c) If a = 3 cm, b = 4 cm and c = 5 cm then find the perimeter of the triangle BCE.

5. **The perpendicular of a right-angled triangle is 6 cm less than $\frac{11}{12}$ times of the base and the hypotenuse is 3 cm less than $\frac{4}{3}$ times of the base.**

  a) Let the base be x. Express the area of the triangle in terms of x.
  b) Find the length of the base.
  c) If the length of the base of the triangle is 12 cm then find the area of the equilateral triangle having the same perimeter as its perimeters.