

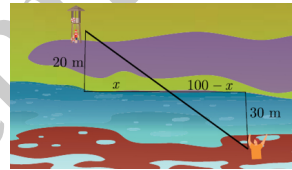
- 21) If $2 \cos\theta = 1$, then the value of θ is [1]
 a) 60° b) 30°
 c) 45° d) 90°
- 22) **Assertion:** $x^2 + 4x + 5$ has two zeroes.
Reason: A quadratic polynomial can have at the most two zeroes. [1]
 a) Assertion and reason both are correct statements and reason is correct explanation for assertion.
 b) Assertion and reason both are correct statements but reason is not correct explanation for assertion.
 c) Assertion is correct statement but reason is wrong statement.
 d) Assertion is wrong statement but reason is correct statement.
- 23) **Assertion (A):** The value of $q = \pm 2$, if $x = 3, y = 1$ is the solution of the line $2x + y - q^2 - 3 = 0$
Reason (R): The solution of the line will satisfy the equation of the line. [1]
 a) Both A and R are true and R is the correct explanation of A.
 b) Both A and R are true but R is not the correct explanation of A.
 c) A is true but R is false.
 d) A is false but R is true.
- 24) **Assertion (A):** Sum of first n terms in an A.P. is given by the formula: $S_n = 2n \times [2a + (n - 1)d]$
Reason (R): Sum of first 15 terms of $2, 5, 8 \dots$ is 345. [1]
 a) Both A and R are true and R is the correct explanation of A.
 b) Both A and R are true but R is not the correct explanation of A.
 c) A is true but R is false.
 d) A is false but R is true.
- 25) **Assertion (A):** If two triangles are similar then they are congruent also.

Reason (R): Ratio of perimeters of two triangles is always equal to ratio of their corresponding sides, medians, altitudes and angle bisectors. [1]

- a) Both A and R are true and R is the correct explanation of A.
 b) Both A and R are true but R is not the correct explanation of A.
 c) A is true but R is false.
 d) A is false but R is true.
- 26) **Assertion (A):** For $0 < \theta \leq 90^\circ$, $\operatorname{cosec}\theta - \cot\theta$ and $\operatorname{cosec}\theta + \cot\theta$ are reciprocal of each other.
Reason (R): $\operatorname{cosec}^2\theta - \cot^2\theta = 1$. [1]
 a) Both A and R are true and R is the correct explanation of A.
 b) Both A and R are true but R is not the correct explanation of A.
 c) A is true but R is false.
 d) A is false but R is true.

Section B

- 27) **Read the text carefully and answer the questions: Swimmer in Distress:** A lifeguard located 20 metre from the water spots a swimmer in distress. The swimmer is 30 metre from shore and 100 metre east of the lifeguard. Suppose the lifeguard runs and then swims to the swimmer in a direct line, as shown in the figure.



- [4]
 (a) How far east from his original position will he enter the water? (Hint: Find the value of x in the sketch.)
 (b) Which similarity criterion of triangle is used?
 (c) What is the distance of swimmer from the shore?
 (d) What is the length of AD?