Review Exercise 13

Q.1 Which of the following are true and which are false?

(i) The angle opposite to the longer side is greater. (True)

(ii) In a right-angled triangle greater angle is of 60^o. (False)

(iii) In an isosceles right-angled triangle, angles other than right angle are each of 45^o. (True)

(iv) A triangle having two congruent sides is called equilateral triangle. (False)

(v) A perpendicular from a point to line is shortest distance. (True)

(vi) Perpendicular to line forms an angle of 90^o. (True)

(vii) A point out side the line is collinear. (False)

(viii) Sum of two sides' of a triangle is greater than the third. (True)

(ix) The distance between a line and a point on it is zero. (True)

(x) Triangle can be formed of length 2cm, 3cm and 5cm. (False)

Q.2 What will be angle for shortest distance from an outside point to the line?

The angle for shortest distance from an outside point to the line is 90^o angle.

Q.3 If 13cm, 12cm and 5cm are the length of a triangle, then verify that difference of measures of any two sides of a triangle is less than the third side.

$a = 13, b = 5, c = 12$ cm

$a - b = 13 - 5 = 8$

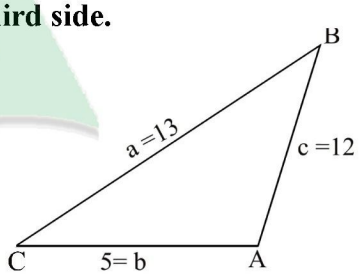
$8 < c$

$c - b = 12 - 5 = 7$

$7 < a$

$a - c = 13 - 12 = 1$

$1 < b$



This is the process which show the difference of any two sides of a triangle is less then the measure of the third.

Q.4 If 10cm, 6cm and 8cm are the length of a triangle, then verify that sum of measures of two sides of a triangle is greater than the third side.

$a = 8$cm, $b = 10$cm, $c = 6$cm

$8 + 10 = 18\text{cm} > 6\text{cm}$

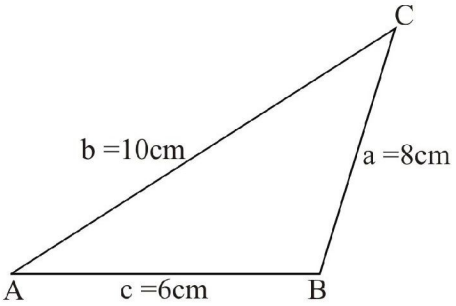
$a + b > c$

$10 + 6 = 16\text{cm} > 8\text{cm}$

$b + c > a$

$6 + 8 = 14\text{cm} > 10\text{cm}$

$c + a > b$



$\therefore$ The sum of measures of two sides of a triangle is greater than the third side.

Q.5 3cm, 4cm and 7cm are not the length of the triangle. Give reasons.

a = 3cm b = 4cm c = 7cm

$3 + 4 = 7$

$a + b = c$

$b + c > a$

$4 + 7 > 3$

$c + a > b$

$7 + 3 > 4$

In a triangle sum of measures of two sides should be greater than the third sides.

Q.6 If 3cm and 4cm are the length of two sides of a right angle triangle than what should be the third length of the triangle.

If sum of the squares of two sides of a triangles is equal to the square of the third side then it is called right angled triangle.

So by Pythagoras theorem.

$$(\overline{AC})^2 = (BC)^2 + (AB)^2$$

$$(\overline{AC})^2 = (4)^2 + (3)^2$$

$$(\overline{AC})^2 = 16 + 9$$

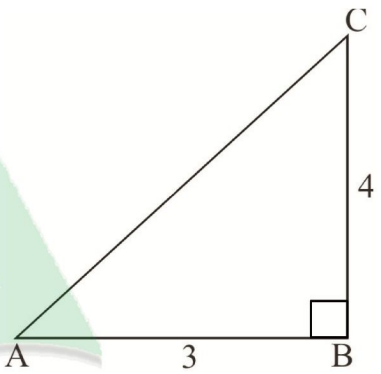
$$(\overline{AC})^2 = 25$$

Taking square root on both sides

$$\sqrt{(\overline{AC})^2} = \sqrt{25}$$

$$\overline{AC} = 5\text{cm}$$

$\therefore$ Length of third side of right angled triangle is 5cm.



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Report any mistake at freeilm786@gmail.com