TickMark.Ai
Mumbai

Class: EM - CLASS 9 **Subject:** Mathematics - Part 2 (Geometry) **Time:**1 hrs
Date: 24-12-2024 **Paper:** Unit 2 **Marks:**20

Q1) Choose the correct alternative answer for each of the following questions : **(4)**

(1) A chord of length 14 cm is at a distance of 6 cm from the center of a circle. The length of another chord at a distance of 2 cm from the center of the circle is ..... .

a) 12 cm
b) 16 cm
c) 14 cm
d) 18 cm

(2) Circles having the same centre and different radii are called ..... circles.

a) congruent circles
b) both a and b
c) concentric circles
d) none

(3) What is the nature of the line which includes the points (-5, 5), (6, 5), (-3, 5), (0, 5)?

a) Passes through the origin
b) Parallel to X - axis
c) Parallel to Y - axis.
d) None of these

(4) In a parallelogram, the perimeter is 22cm. If the longer side measures 6.5 cm, what is the measure of shorter side.

a) 6.5 cm
b) 11 cm
c) 4.5 cm
d) 13 cm

Q2(A) Complete the following activity and rewrite it (any one) : **(2)**

(1) A perpendicular drawn from the centre of a circle on its chord bisects the chord.

Given: seg AB is a chord of a circle with centre O.
seg OP ⊥ chord AB
To prove: seg AP ≅ seg BP
Proof:
Draw seg OA and seg OB
In ΔOPA and ΔOPB
∠OPA ≅ ∠OPB ... (____)
seg OP ≅ ____ ... (common side)
hypotenuse OA ≅ hypotenuse OB ... (____)
Δ OPA ≅ Δ OPB ... (hypotenuse side theorem)
seg PA ≅ seg PB .... (____)

(2) Adjacent sides of a rectangle are 24 cm and 7 cm. Find the length of the diagonal.

Solution:
Given: □ABCD is a rectangle
AB = 24 cm, BC = 7 cm
To Find : Side AC = ?
In ΔABC,
∠ABC = 90 ... (____)
∴ $AC^2 = AB^2 + BC^2$ .... (____)
= ____ = 576 + 49
∴ AC^2 = ____

∴ AC = _____ ... (Taking square roots)

(B) Solve the following subquestions (any two) : **(4)**

(1) In a circle, two equal chords are at distance of 9 cm from the centre and length of equal chords is 24 cm. Find radius of circle.

(2) Plot the following points and check whether they are collinear or not.
(1, 2) (2, -1) and (-1, 4)

(3) Using opposite angles test for parallelogram, prove that every rectangle is a parallelogram.

Q3) Solve the following subquestions (any two) : **(6)**

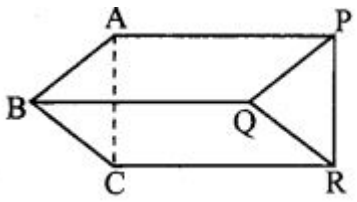
(1) Draw the graph of the equations given below.
$3x - y = 0$

(2) In parallelogram ABCD, if $\angle A = (3x + 12)°$, $\angle B = (2x - 32)°$. Find the value of x and then find the measures of m $\angle C$ and m$\angle D$.

(3) Radius of the circle is 34 cm and the distance of the chord from the centre is 30 cm, Find the length of the chord.

Q4) Solve the following subquestions (any one) : **(4)**

(1) In the adjoining figure, if seg AB ∥ seg PQ, seg AB ≅ seg PQ, seg AC ∥ seg PR, seg AC ≅ seg PR, then Prove that seg BC ∥ seg QR and seg BC ≅ seg QR.



(2) Construct ΔPQR such that $\angle P = 70°$, $\angle R = 50°$, QR = 7.3 cm. and construct its circumcircle.

All the Best