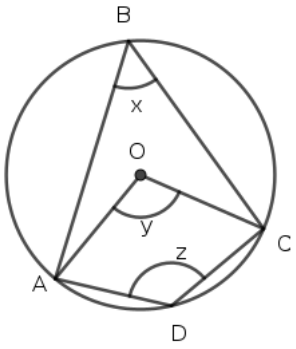
Notes of Online class

Session 4

1) In the figure the angle measures x, y, z are in an arithmetic sequence.



a) What is $x + z$?

b) Find the angle measure y

c) Find x, y and z.

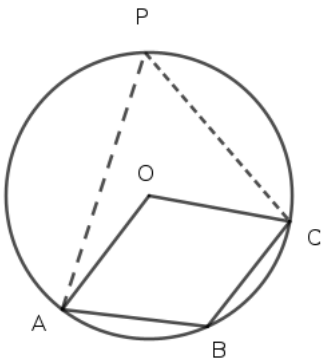
Answers

a) We know that sum of the angle on the arc and in the complement is $180°$. That is $x + z = 180°$

b) Since x, y, z are in an arithmetic sequence , $2y = x + z$. That is $2y = 180, y = 90°$

c) We know that $x = \frac{y}{2} = 45°$, $z = 180 - 45 = 135°$

2) One vertex of a parallelogram is at the centre of a circle. Other vertices are on the circle.



a) If $\angle APC = x$ then what is $\angle AOC$?

b) What is $\angle ABC$?

c) Find x

d) Find the angles of $OABC$

Answers

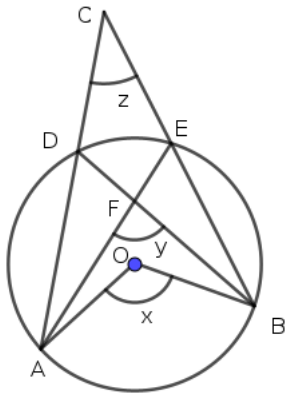
a) $2x$ Reason: angle made by the arc at the centre is two times angle in the complement

b) $\angle ABC = 2x$ Reason: Opposite angles of a parallelogram are equal

c) $x + 2x = 180, 3x = 180, x = 60°$ Reason: sum of the angles on the arc and in the complement is $180°$

d) Angles are $120°, 120°, 60°, 60°$

3) In the figure $\angle AOC = x, \angle AFB = y, \angle ACB = z$ then



a) What is $\angle ADB$ and $\angle AEB$?

b) What is $\angle DFE$?

c) What are the angles of $CDFE$?

d) Prove that $x = y + z$

Answers

a) $\angle ADB = \angle AEB = \frac{x}{2}$

b) y Reason: vertically opposite angles are equal

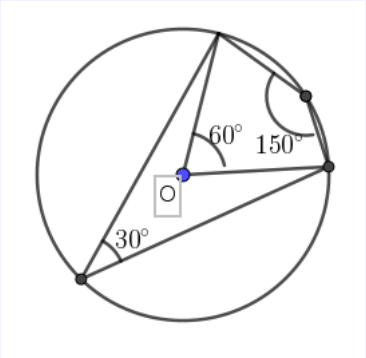
c) $180 - \frac{x}{2}, 80 - \frac{x}{2}, y, z$

d) Sum of these angles is $360°$.
$180 - \frac{x}{2} + 180 - \frac{x}{2} + y + z = 360$
$x = y + z$

4) Draw a circle of suitable radius . Construct $60°$ angle at the centre , $30°$ angle and $150°$ angle on the circle without using protractor.

Answers

⋆ See the rough diagarm.



(Follow the steps give below , recall the process discussed in the class)

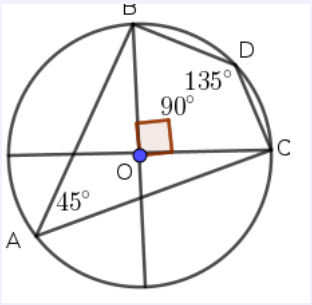
b) Draw the circle, radius and $60°$ as discussed in the class

c) Draw $30°$ in the complement and $180 - 30 = 150$ on the arc

5) Draw a circle of suitable radius . Construct $90°$ angle at the centre , $45°$ angle and $135°$ angle on the circle without using protractor.

Answers

a) See the rough diagram



b) Draw perpendicular diametres.

c) Draw angles $45°$ in the complement and $135°$ on the arc

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