Circle

PRACTICE SET 42 [PAGE 77]

Practice Set 42 | Q 1.1 | Page 77

Complete the table below.

Radius (r)	Diameter (d)	Circumference (c)
7 cm	_____	_____

Solution: Radius, r = 7 cm

Diameter, d = 2r = 2 × 7 = 14 cm

∴ Circumference, c = πd

= 22/7 × 14
= 22 × 2
= 44 cm

Radius (r)	Diameter (d)	Circumference (c)
7 cm	**14 cm**	**44 cm**

Practice Set 42 | Q 1.2 | Page 77

Complete the table below.

Radius (r)	Diameter (d)	Circumference (c)
_____	28 cm	_____

Solution: Diameter, d = 28 cm

$$\text{Radius, } r = \frac{d}{2} = \frac{28}{2} = 14 \text{ cm}$$

$$\therefore \text{Circumference, } c = 2\pi r$$

$$= 2 \times \frac{22}{7} \times 14$$

$$= 88 \text{ cm}$$

Radius (r)	Diameter (d)	Circumference (c)
14 cm	28 cm	**88 cm**

Practice Set 42 | Q 1.3 | Page 77

Complete the table below.

Radius (r)	Diameter (d)	Circumference (c)
_____	_____	616 cm

Solution: Circumference, c = 616 cm

Now, c = 2πr .....(where 'r' is the radius)

$$\Rightarrow 616 = 2 \times \frac{22}{7} \times r$$

$$\Rightarrow r = 616 \times \frac{1}{2} \times \frac{7}{22}$$

So, radius = 98 cm
Diameter, d = 2r = 2 × 98 = 196 cm

Radius (r)	Diameter (d)	Circumference (c)
98 cm	**196 cm**	616 cm

Practice Set 42 | Q 1.4 | Page 77

Complete the table below.

Radius (r)	Diameter (d)	Circumference (c)
_____	_____	72.6 cm

Solution: Circumference, c = 72.6 cm

Now, c = 2πr .....(where 'r' is the radius)

$$\Rightarrow 72.6 = 2 \times \frac{22}{7} \times r$$

$$\Rightarrow r = 72.6 \times \frac{1}{2} \times \frac{7}{22}$$

So, radius = 11.55 cm
Diameter, d = 2r = 2 × 11.55 = 23.1 cm

Radius (r)	Diameter (d)	Circumference (c)
11.55 cm	**23.1 cm**	616 cm

Practice Set 42 | Q 2 | Page 77

If the circumference of a circle is 176 cm, find its radius.

Solution: Circumference, c = 176 cm

Now, c = 2πr .....(where 'r' is the radius of circle)

$$\Rightarrow 176 = 2 \times \frac{22}{7} \times r$$

$$\Rightarrow r = 176 \times \frac{1}{2} \times \frac{7}{22}$$

⇒ r = 28

∴ Radius of the circle = 28 cm

Practice Set 42 | Q 3 | Page 77

The radius of a circular garden is 56 m. What would it cost to put a 4-round fence around this garden at a rate of 40 rupees per metre?

Solution: Radius of the circular garden, r = 56 m

Circumference of the circular garden, c = 2πr

= 2 × 22/7 × 56

= 352 m

∴ Length of the wire needed for one round of fencing = c = 352 m

Cost of one round of fencing = length of wire × cost per metre

= 352 × 40

= 14080 rupees

Cost of four round of fencing = 4 × 14080 = 56320 rupees

Practice Set 42 | Q 4 | Page 77

The wheel of a bullock cart has a diameter of 1.4 m. How many rotations will the wheel complete as the cart travels 1.1 km?

Solution: Diameter of the wheel, d = 1.4 m

Circumference, c = πd

= 22/7 × 1.4

= 4.4 m

When the wheel completes 1 rotation, it covers a distance that is equal to its circumference.

So, the number of rotations taken by the wheel to cover 4.4 m = 1

Now, the wheel covered a total distance of 1.1 km.

We know that, 1 km = 1000 m

∴ 1.1 km = 1.1 × 1000 m = 1100 m

$$\therefore \text{Total number of rotations taken by wheel} = \frac{\text{total distance}}{\text{circumference}}$$

$$= \frac{1100}{4.4}$$

$$= \frac{11000}{44}$$

$$= 250$$

Hence, the wheel completes 250 rotations to cover a distance of 1.1 km.

PRACTICE SET 43 [PAGE 79]

Practice Set 43 | Q 1 | Page 79

Choose the correct option.

If arc AXB and arc AYB are corresponding arcs and m(arc AXB) = 120° then m(arc AYB) = _____

1. 140°
2. 60°
3. **240°**
4. 160°

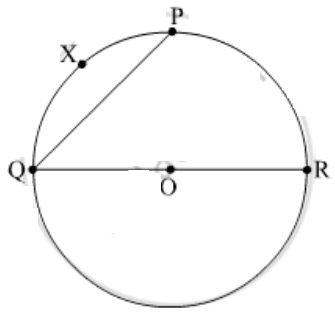
Solution: 240°

Explanation:

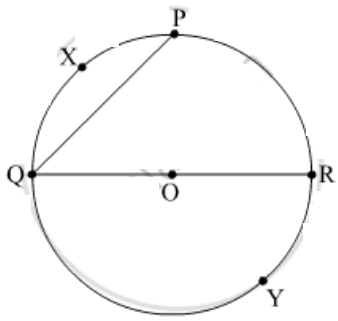
Consider that arc AXB is the minor arc and arc AYB is the corresponding major arc.
It is known that, the measure of major arc = 360° − the measure of the corresponding minor arc.
We have, m(arc AXB) = 120°.
So, m(arc AYB) = 360° − m(arc AXB) = 360° − 120° = 240°
Hence, the correct answer is option 240°.

Practice Set 43 | Q 2 | Page 79

Some arcs are shown in the circle with centre 'O'. Write the names of the minor arcs, major arcs, and semicircular arcs from among them.



Solution: Minor arc: An arc of a circle having a measure of less than 180°.
Major arc: An arc of a circle having a measure greater than 180°.
Semicircular arc: An arc of a circle having a measure equal to 180°.



Names of minor arcs:
(i) arc PXQ
(ii) arc PR
(iii) arc RY
(iv) arc XP
(v) arc XQ
(vi) arc QY

Names of major arcs:
(i) arc PYQ
(ii) arc PQR

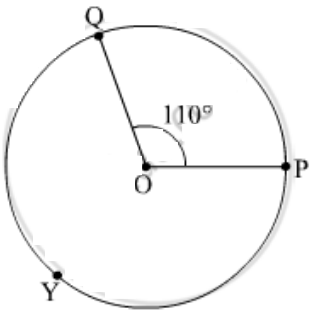
(iii) arc RQY
(iv) arc XQP
(v) arc QRX

Names of semicircular arcs:
(i) arc QPR
(ii) arc QYR

Practice Set 43 | Q 3 | Page 79

In a circle with centre O, the measure of a minor arc is 110°. What is the measure of the major arc PYQ?

Solution:



Suppose PQ is the minor arc and then m(arc PQ) = 110°.
We know that, measure of major arc = 360° − measure of corresponding minor arc.
∴ m(arc PYQ) = 360° − m(arc PQ)
= 360° − 110°
= 250°
Hence, the measure of major arc PYQ is 250°.