

CHAPTER-4 | Quadrilaterals

QUIZ
PART-21

1. When is a trapezium called an isosceles trapezium?
 A. When all four sides are equal
 B. When its non-parallel sides are equal
 C. When its diagonals are perpendicular
 D. When all four angles are equal (B)

Explanation: A trapezium is called an isosceles trapezium when its two non-parallel sides have equal lengths.

2. In the construction of isosceles trapezium UVWX, which angle is measured using a protractor?
 A. $\angle U$
 B. $\angle V$
 C. $\angle U$
 D. $\angle X$ (C)

Explanation: The construction shown in the PDF instructs students to construct isosceles trapezium UVWX and measure $\angle U$ using a protractor.

3. In isosceles trapezium UVWX, which pair represents the equal non-parallel sides?
 A. UX and VW
 B. UV and XW
 C. UV and UX
 D. XW and VW (A)

Explanation: Since UV and XW are parallel, UX and VW are the non-parallel sides. These sides are equal in an isosceles trapezium.

4. In an isosceles trapezium, the angles opposite the equal sides are:
 A. Supplementary
 B. Perpendicular
 C. Equal
 D. Unequal (C)

Explanation: The PDF states that the angles opposite the equal non-parallel sides of an isosceles trapezium are equal.

5. If $\angle U = 75^\circ$ in isosceles trapezium UVWX, what is $\angle V$?
 A. 105°
 B. 75°
 C. 90°
 D. 115° (B)

Explanation: The two angles adjacent to the same base of an isosceles trapezium are equal. Therefore, $\angle U = \angle V = 75^\circ$.

6. If $\angle U = 75^\circ$ and $UV \parallel XW$, what is $\angle X$?
 A. 105°
 B. 75°
 C. 180°
 D. 15° (A)

Explanation: UX acts as a transversal of the parallel lines UV and XW. Therefore, consecutive interior angles are supplementary:

$$\angle U + \angle X = 180^\circ$$

$$75^\circ + \angle X = 180^\circ$$

$$\angle X = 105^\circ$$

7. If $\angle U = 75^\circ$, what are all four angles of isosceles trapezium UVWX?
 A. $75^\circ, 105^\circ, 75^\circ, 105^\circ$
 B. $75^\circ, 75^\circ, 75^\circ, 135^\circ$
 C. $90^\circ, 90^\circ, 75^\circ, 105^\circ$
 D. $\angle U = \angle V = 75^\circ$ and $\angle X = \angle W = 105^\circ$ (D)

Explanation: Base angles of an isosceles trapezium are equal. Thus, $\angle U = \angle V = 75^\circ$. Each upper angle is supplementary to a lower angle, so $\angle X = \angle W = 105^\circ$.

8. In the construction shown on page 8, what type of quadrilateral is XWZY?
 A. Rhombus
 B. Kite
 C. Rectangle
 D. Trapezium (C)

Explanation: In the diagram, $XW \parallel YZ$, while XY and WZ are perpendicular to YZ. Therefore, all four angles of XWZY are right angles, making it a rectangle.

9. Which congruence rule can be used to prove that $\triangle UXY \cong \triangle VWZ$?
 A. RHS congruence rule
 B. AAA congruence rule
 C. SAS congruence rule only
 D. SSS congruence rule only (A)

Explanation: Both triangles are right-angled. Their hypotenuses UX and VW are equal because they are the equal sides of the isosceles trapezium. Also, XY and WZ are equal as opposite sides of rectangle XWZY. Therefore, the triangles are congruent by RHS.

10. In isosceles trapezium PQRS, $\angle P = 100^\circ$, $\angle Q = 100^\circ$ and $\angle S = 80^\circ$. What is $\angle R$?
 A. 70°
 B. 80°
 C. 100°
 D. 180° (B)

Explanation: The angles adjacent to the same base of an isosceles trapezium are equal. Therefore, $\angle R = \angle S = 80^\circ$.