Area of a Trapezium

A. Choose the correct answer:

1. The formula for the area of a trapezium is:

a) $\frac{1}{2}$ × (sum of parallel sides) × height

b) (sum of parallel sides) × height

c) $\frac{1}{3}$ × (sum of parallel sides) × height

d) (sum of non-parallel sides) × height

2. If the lengths of the parallel sides of a trapezium are 8 cm and 12 cm, and the height is 5 cm, the area is:

a) 50 cm² b) 40 cm²

c) 25 cm² d) 80 cm²

3. The area of a trapezium with parallel sides 10 m and 6 m, and height 4 m is:

a) 64 m² b) 32 m²

c) 40 m² d) 20 m²

4. In a trapezium, if both parallel sides are of equal length, the trapezium becomes a:

a) Rectangle b) Square

c) Parallelogram d) Rhombus

5. If the height of a trapezium is doubled, the area will:

a) Remain the same b) Become half

c) Double d) Become four times

B. Write the Missing Terms to Complete the Sentences:

1. The area of a trapezium = _____ × (sum of lengths of parallel sides) × height
2. The two sides that are parallel in a trapezium are called _____ sides
3. If a trapezium has both non-parallel sides equal, it is called an _____ trapezium
4. The unit of area is always expressed in _____ units
5. In the area formula, the height is measured _____ to the parallel sides

C. Figure out the answers to these questions:

1. Find the area of a trapezium with parallel sides 15 m and 25 m, and height 10 m
2. A trapezium has parallel sides of lengths 6 cm and 10 cm, and height 7 cm Find its area
3. The sum of the lengths of the parallel sides of a trapezium is 20 m, and the height is 6 m Find the area
4. If the area of a trapezium is 84 cm^2, and the parallel sides are 10 cm and 14 cm, find the height
5. A trapezium has parallel sides measuring 5 m and 7 m Its height is 8 m Find the area

D. Mark each sentence with a True (✓) or False (✗):

1. The height of a trapezium is the distance between the two non-parallel sides. _____
2. Area of a trapezium is found by using 1/2 × (sum of parallel sides) × height. _____
3. If the height is halved, the area of the trapezium becomes double. _____
4. Trapeziums have exactly one pair of parallel sides. _____
5. The formula for area of a trapezium and a parallelogram is the same. _____

E. Challenge yourself with these questions:

1. The parallel sides of a trapezium are 12 m and 18 m, and the height is 5 m Find the area
2. The area of a trapezium is 72 cm^2 and the lengths of the parallel sides are 8 cm and 10 cm Find the height
3. Find the area of a trapezium whose parallel sides are 5 m and 9 m and height is 6 m
4. A trapezium has an area of 45 m^2 If its parallel sides are 5 m and 7 m, find its height
5. The sum of the lengths of the parallel sides of a trapezium is 30 cm, and the height is 8 cm Find the area