

CHAPTER 9

AREAS OF PARALLELOGRAMS AND TRIANGLES

February 8, 2023

EXERCISE 9.1

Write the correct answer in each of the following:

1. The median of a triangle divides it into two
 - (a) triangles of equal area
 - (b) congruent triangles
 - (c) right triangles
 - (d) isosceles triangles

2. In which of the following figures (Figure 1), you find two polygons on the same base and between the same parallels?

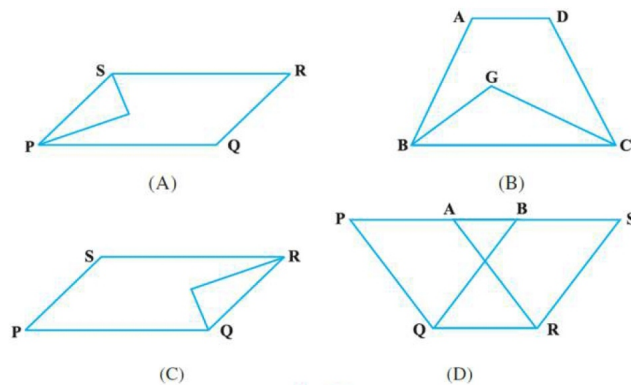


Figure 1

3. The figure obtained by joining the mid-points of the adjacent sides of a rectangle of sides 8cm and 6cm is:
 - (a) a rectangle of area $24cm^2$
 - (b) a square of area $25cm^2$
 - (c) a trapezium of area $24cm^2$
 - (d) a rhombus of area $24cm^2$

4. In Figure 2, the area of parallelogram $ABCD$ is:
 - (a) $AB \times BM$
 - (b) $BC \times BN$

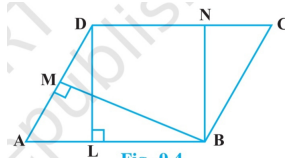


Figure 2

(c) $DC \times DL$

(d) $AD \times DL$

5. In Figure 3, if parallelogram $ABCD$ and rectangle $ABEM$ of equal area, then:

(a) Perimeter of $ABCD$ = Perimeter of $ABEM$

(b) Perimeter of $ABCD$ < Perimeter of $ABEM$

(c) Perimeter of $ABCD$ > Perimeter of $ABEM$

(d) Perimeter of $ABCD$ = $\frac{1}{2}$ (Perimeter of $ABEM$)

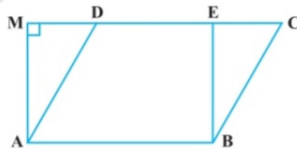


Figure 3

6. The mid-point of the sides of a triangle along with any of the vertices as the fourth point make a parallelogram of area equal to

(a) $\frac{1}{2}ar(ABC)$

(c) $\frac{1}{4}ar(ABC)$

(b) $\frac{1}{3}ar(ABC)$

(d) $ar(ABC)$

7. Two parallelograms are on equal bases and between the same parallels. The ratio of their areas is

(a) 1 : 2

(b) 1 : 1

(c) 2 : 1

(d) 3 : 1

8. $ABCD$ is a quadrilateral whose diagonal AC divides it into two parts, equal in area, then $ABCD$

(a) is a rectangle

(c) is a parallelogram

(b) is always a rhombus

(d) need not be any of (a), (b) or (c)

9. If a triangle and a parallelogram are on the same base and between same parallels, then the ratio of the area of the triangle to the area of the parallelogram is

(a) 1 : 3

(b) 1 : 2

(c) 3 : 1

(d) 1 : 4

10. $ABCD$ is a trapezium with parallel sides $AB = a\text{ cm}$ and $DC = b\text{ cm}$ (Figure 4). E and F are the mid-points of the non-parallel sides. The ratio of $\text{ar}(ABFE)$ and $\text{ar}(EFCD)$ is

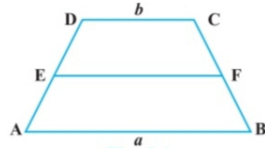


Figure 4

(a) $a : b$

(b) $(3a + b) : (a + 3b)$

(c) $(a + 3b) : (3a + b)$

(d) $(2a + b) : (3a + b)$