CHAPTER 9
AREAS OF PARLLELOGRAMS 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?

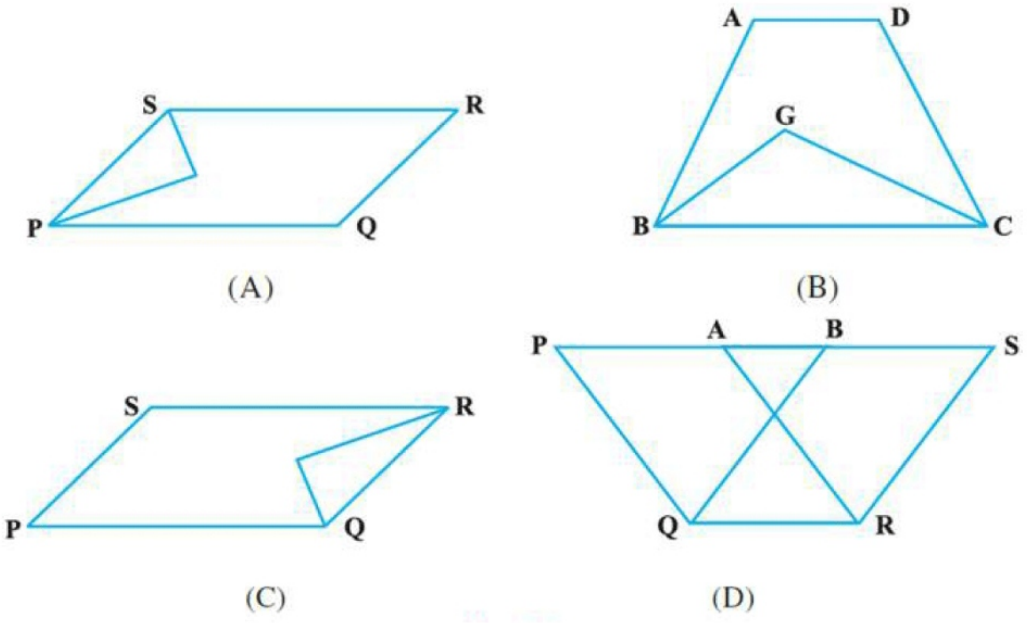

Figure 1

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:

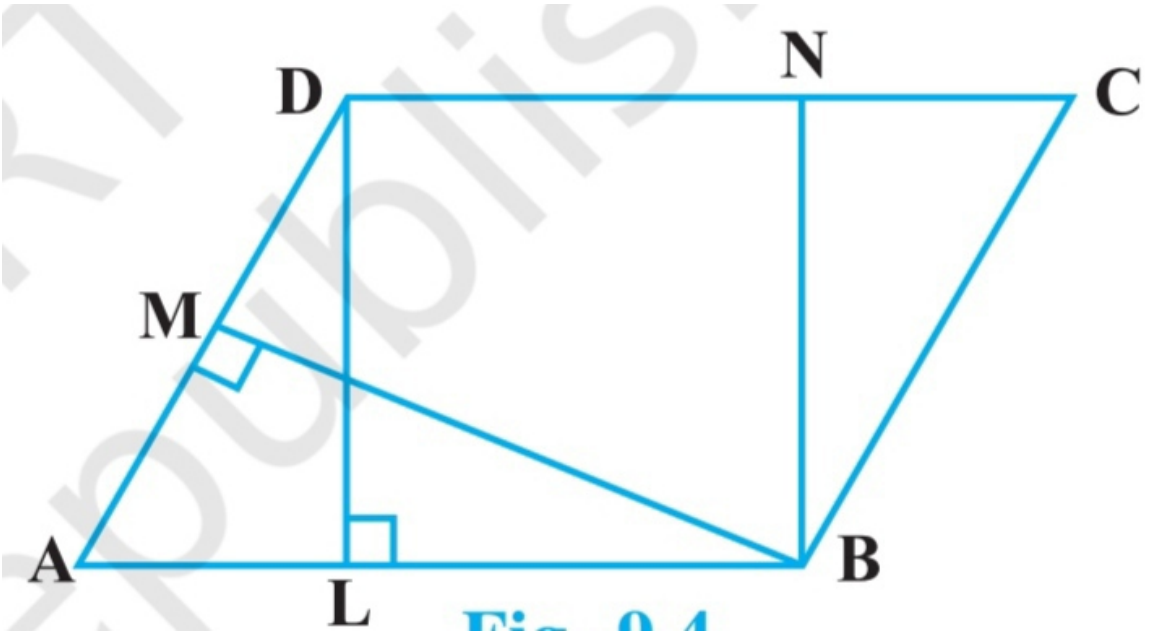

Figure 2

(a) AB x BM
(b) BC x BN
(c) DC x DL
(d) AD x DL

5. In Figure (3), if parallelogram $ABCD$ and rectangle $ABEF$ 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 $ABEM$)

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) $\frac{1}{2}ar(ABC)$
(b) $\frac{1}{3}ar(ABC)$
(c) $\frac{1}{4}ar(ABC)$
(d) $ar(ABC)$

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

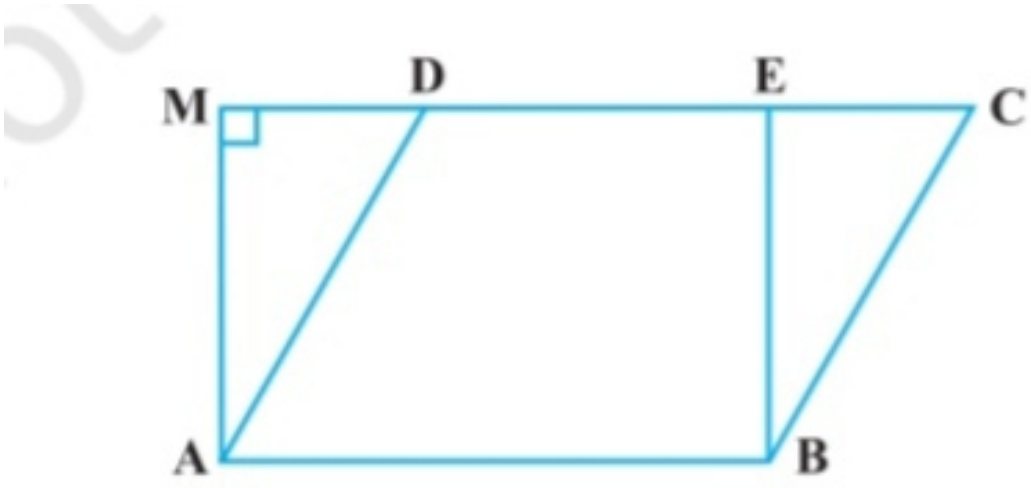

Figure 3

(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
(b) is always a rhombus
(c) is a parallelogram
(d) need not be any of (a), (b) or (c)

9. If a triangle and a parallelogram are on the same base an 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 $AB = acm$ and $DC = bcm$ (Figure (**??**)). E and F are the mid-points of the non-parallel sides. The ratio of $ar(ABFE)$ and $ar(EFCD)$ is

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

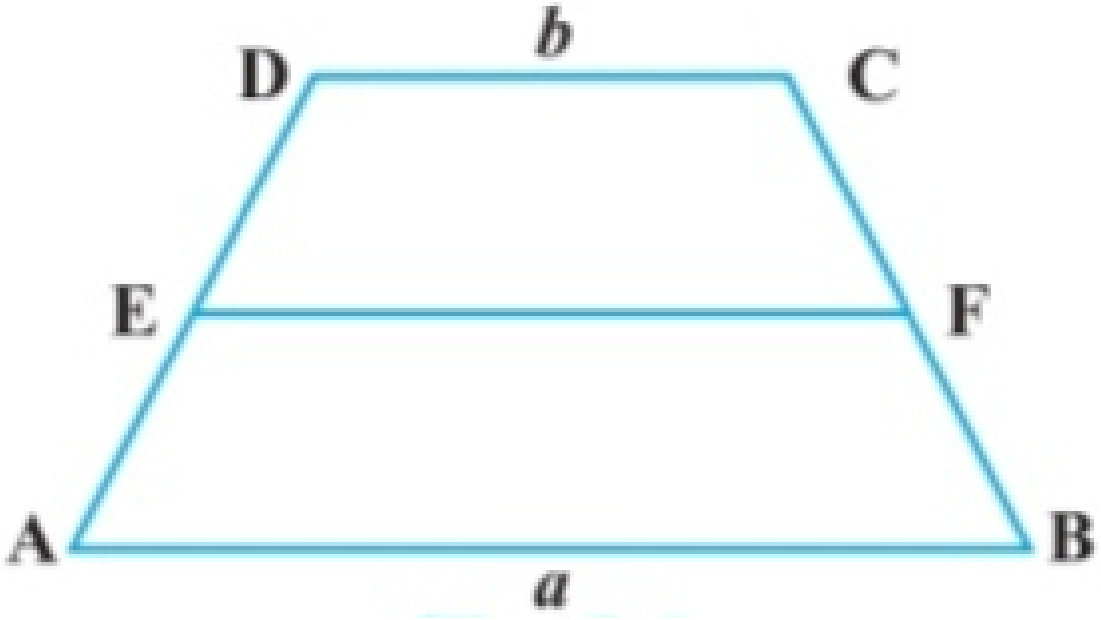

Figure 4