Review Exercise 16

Q.1 Which of the following are true and which are false?

(i) Area of a figure means region enclosed by bounding lines of closed figures. (True)

(ii) Similar figures have same area. (False)

(iii) Congruent figures have same area. (True)

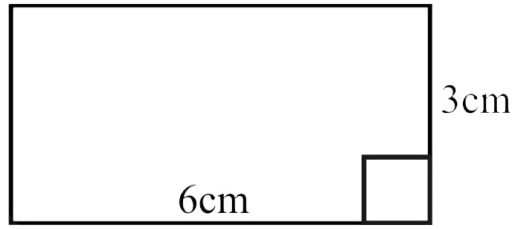
(iv) A diagonal of a parallelogram divides it into two non-congruent triangles. (False)

(v) Altitude of a triangle means perpendicular from vertex to the opposite side (base). (True)

(vi) Area of a parallelogram is equal to the product of base and height. (True)

Q.2 Find the area of the following.

(i)



Given

Length of rectangle = $\ell = 3cm$

Width of rectangle = $w = 6cm$

Required:

Area of rectangle =?

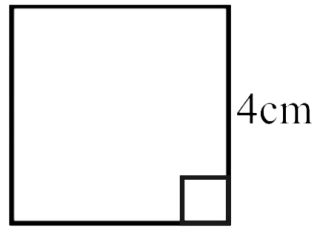
Solution:

Area of rectangle = length × width

= 3cm × 6cm

$\Rightarrow$ Area of rectangle = 18 cm^2

(ii)



Given

Length of square = $\ell = 4cm$

Required:

Area of square =?

Solution:

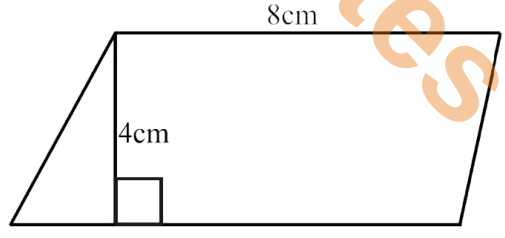
Area of square = $\ell \times \ell$

$= \ell^2$

$= (4cm)^2$

$\Rightarrow$ Area of square = $16cm^2$

(iii)



Given

Height of parallelogram = 4cm

Base of parallelogram = 8cm

Required:

Area of parallelogram = ?

Solution:

Area of parallelogram = b × h

= 8cm × 4cm

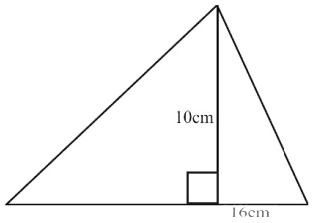
$\Rightarrow$ area of parallelogram = 32 cm^2

(iv)

Given:

Height of triangle = h = 10 m

Base of triangle = b = 16cm



Required:

Area of triangle =?

Solution:

$$\text{Area of triangle} = \frac{1}{2} \times b \times h$$

$$= \frac{1}{\cancel{2}} \times \overset{8}{\cancel{16}}\ cm \times 10cm$$

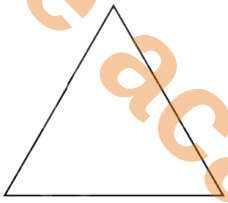
$$= 8cm \times 10\ cm$$

$$= 80cm^2$$

Q.3 Define the following

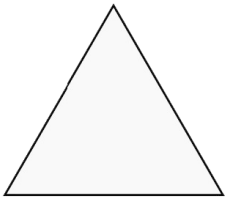
(i) Area of a figure

The region enclosed by the bounding lines of a closed figure is known as area of the figure.



(ii) Triangular Region

A triangular region is the union of a triangle and its interior i-e three line segments forming the triangle and its interior



(iii) Rectangular Region

A rectangular region is the union of a rectangle and its interior. A rectangular region can be divided into two or more than two triangular regions in many ways.

(iv) Altitude or Height

If one side of a triangle is taken as its base, the perpendicular distance form one vertex opposite side is called altitude of triangle. $\overline{AD}$ is its altitude.