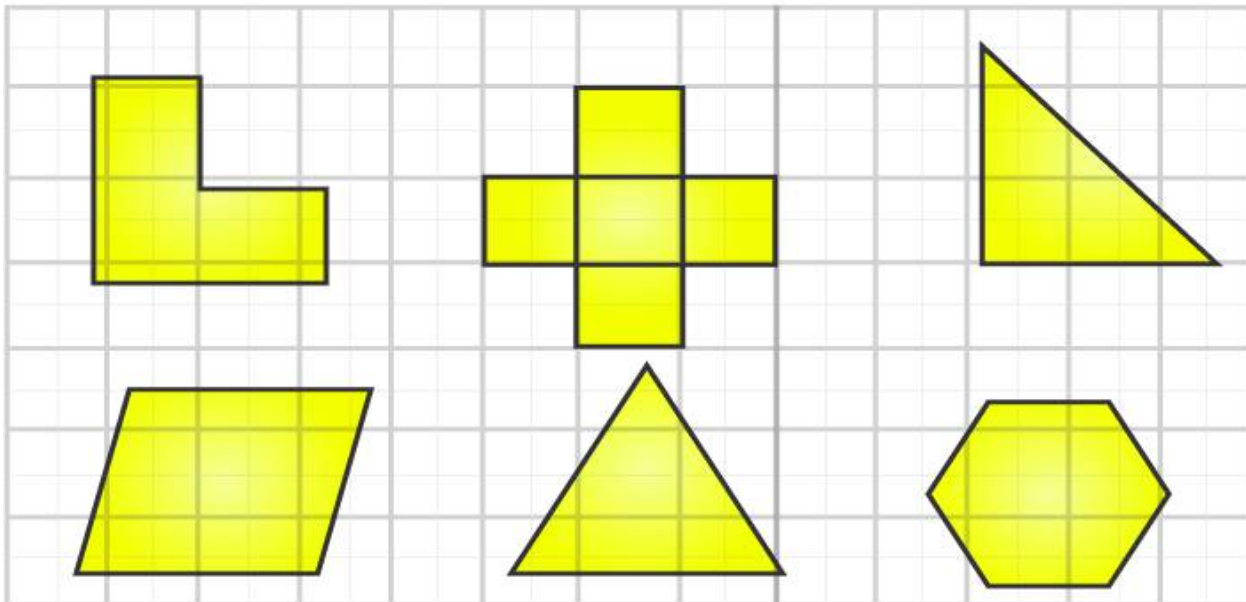


EXERCISE 20.3

PAGE: 20.14

1. The following figures are drawn on a squared paper. Count the number of squares enclosed by each figure and find its area, taking the area of each square as 1 cm^2 . (Fig. 20.25).



Solution:

(i) The given shape has 16 complete squares.

It is given that area of one square = 1 cm^2

So the area of the given shape = $16 \times 1 = 16 \text{ cm}^2$

(ii) The given shape has 36 complete squares.

It is given that area of one square = 1 cm^2

So the area of the given shape = $36 \times 1 = 36 \text{ cm}^2$

(iii) The given shape has 15 complete and 6 half squares.

It is given that area of one square = 1 cm^2

So the area of the given shape = $15 + 6 \times \frac{1}{2} = 18 \text{ cm}^2$

(iv) The given shape has 20 complete and 8 half squares.

It is given that area of one square = 1 cm^2

So the area of the given shape = $20 + 8 \times \frac{1}{2} = 24 \text{ cm}^2$

(v) The given shape has 13 complete, 8 more than half and 7 less than half squares.

It is given that area of one square = 1 cm^2

So the area of the given shape = $13 + 8 \times \frac{1}{2} = 21 \text{ cm}^2$

(vi) The given shape has 8 complete, 6 more than half and 4 less than half squares.

It is given that area of one square = 1 cm^2

So the area of the given shape = $8 + 6 \times \frac{1}{2} = 14 \text{ cm}^2$

2. On a squared paper, draw (i) a rectangle, (ii) a triangle (iii) any irregular closed figure. Find the approximate area of each by counting the number of squares complete, more than half and exactly half.

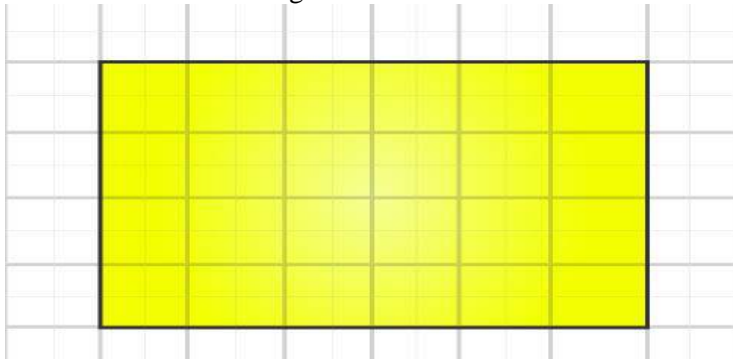
Solution:

(i) A rectangle

The given shape has 18 complete squares

Assume that area of one square = 1 cm^2

So the area of the rectangle = $18 \times 1 = 18 \text{ cm}^2$

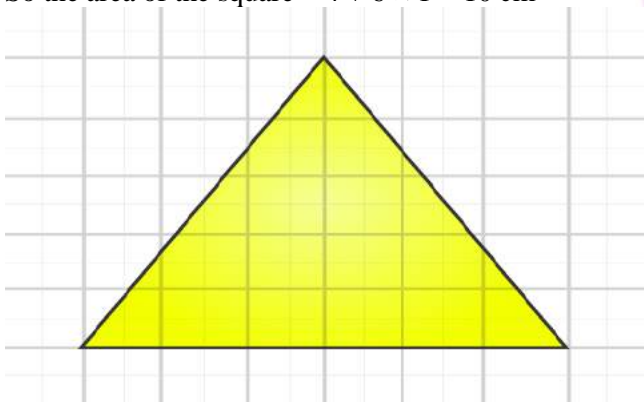


(ii) A triangle

The given shape has 4 complete, 6 more than half and 6 less than half squares.

Assume that area of one square = 1 cm^2

So the area of the square = $4 + 6 \times 1 = 10 \text{ cm}^2$

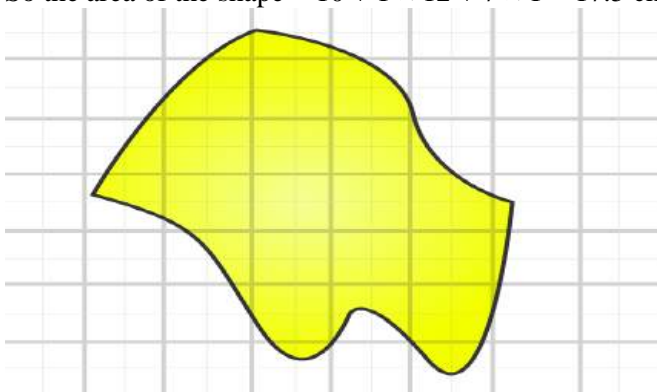


(iii) Any irregular figure

The given shape has 10 complete, 1 exactly half, 7 more than half and 6 less than half squares.

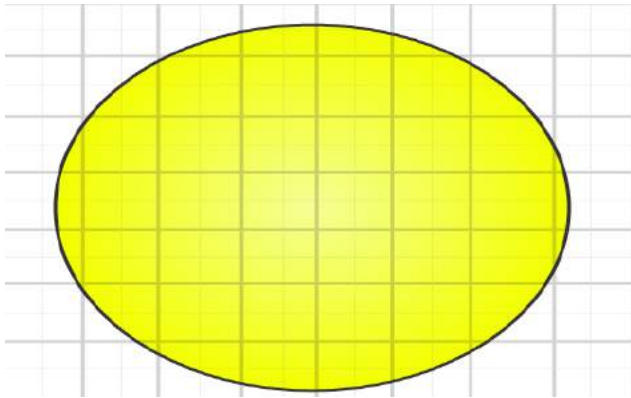
Assume that area of one square = 1 cm^2

So the area of the shape = $10 + 1 \times \frac{1}{2} + 7 \times \frac{1}{2} = 17.5 \text{ cm}^2$



3. Draw any circle on the graph paper. Count the squares and use them to estimate the area of the circular region.

Solution:



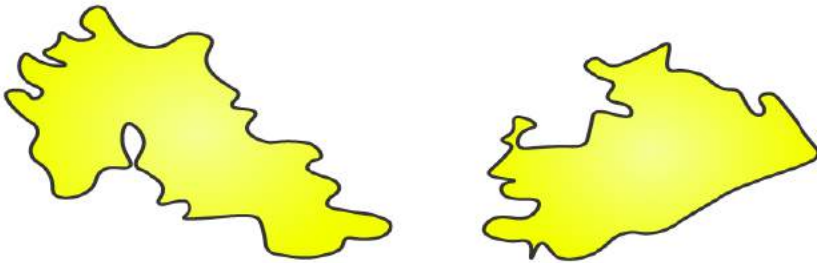
The given circles has 21 complete, 15 more than half and 8 less than half squares.

Assume that area of one square = 1 cm^2

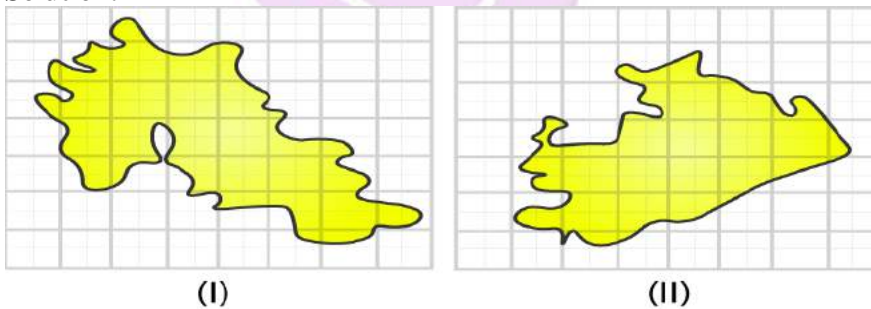
By neglecting less than half squares, we get

Area of the circle = $21 + 15 = 36 \text{ cm}^2$

4. Use tracing paper and centimetre graph paper to compare the areas of the following pairs of figures:



Solution:



With the help of tracing paper trace both the figures on a graph

Figure (i) has 4 complete, 9 more than half and 9 less than half squares.

Assume that area of one square = 1 cm^2

By neglecting less than half squares, we get

Area of the shape = $4 + 9 = 13 \text{ cm}^2$

Figure (ii) has 8 complete, 11 more than half and 10 less than half squares.

Assume that area of one square = 1 cm^2

By neglecting less than half squares, we get
Area of the shape = $8 + 11 = 19 \text{ cm}^2$

By comparing the areas of both the shapes, we know that the figure (ii) has area greater than that of figure (i).

