



1. Which of the following are true?

- a) Any two triangles are congruent.
- b) Any two triangles are similar.
- c) Any two circles are congruent.
- d) Any two squares are congruent.
- e) Any two squares are similar.
- f) Any two circles are similar.

(i) {e,f} (ii) {b,f} (iii) {c,d,e} (iv) {a,e} (v) {a,f,e}

2. Which of the following are true?

- a) A square is a polygonal region.
- b) A semi-circle is a polygonal region.
- c) A circle is a polygonal region.
- d) A triangle is a polygonal region.
- e) A sector is a polygonal region.

(i) {b,a} (ii) {e,b,a} (iii) {c,d,a} (iv) {c,d} (v) {a,d}

3. Which of the following are true?

- a) If two figures are congruent, then they are similar too.
- b) Similar and congruent are not synonymous.
- c) If two figures are similar, then they are congruent too.
- d) Similar figures have same area.
- e) Congruent figures have same area.

(i) {c,d,e} (ii) {d,b} (iii) {a,b,e} (iv) {c,a} (v) {c,a,b}

4. Which of the following are true?

- a) A polygonal region can be divided into a finite number of triangles in a unique way.
- b) Area of the union of two polygonal region is the sum of the individual area.
- c) Area of a convex polygonal region is equal to the sum of the areas of all triangles formed by joining the vertices of the polygon with an interior point.
- d) Area of the union of two polygonal region is not equal to the sum of the individual area.

(i) {c,d} (ii) {a,b,c} (iii) {b,d} (iv) {a,d,c} (v) {a,c}

5. Which of the following are necessary conditions for similarity of two polygons ?

- a) The corresponding sides are equal.
- b) The corresponding sides are proportional.
- c) The corresponding angles are proportional.
- d) The corresponding angles are equal.

(i) {c,d} (ii) {a,d,b} (iii) {b,d} (iv) {a,c,b} (v) {a,b}

6. Which of the following are true?

- a) Similarity is transitive.
- b) Similarity is anti symmetric.
- c) Similarity is reflexive.
- d) Similarity is symmetric.

(i) {b,c} (ii) {b,a} (iii) {b,d} (iv) {b,a,c} (v) {a,c,d}

7. Which of the following are true?

- a) Any two triangles are similar if the corresponding angles are equal.
- b) Any two triangles are similar if the corresponding sides are proportional.
- c) Any two quadrilaterals are similar if the corresponding sides are proportional.
- d) Any two quadrilaterals are similar if the corresponding angles are equal.

(i) {d,c} (ii) {d,a,b} (iii) {d,a} (iv) {d,b} (v) {a,b,c}

8. The ratio of the bases of two triangles ABC and DEF is 8:4 .

If the triangles are equal in area, then the ratio of their heights is

(i) 9:4 (ii) 8:6 (iii) 4:8 (iv) 8:1 (v) 7:4

9. $\triangle ABC$ is a triangle with sides $BC = 14$ cm, $CA = 12$ cm and $AB = 11$ cm. $\triangle ABC$ is enlarged to $\triangle A'B'C'$ such that the smallest side of $\triangle A'B'C'$ is 22 cm. Find the scale factor.

(i) 2 (ii) 0 (iii) 4 (iv) 1 (v) 3

10. $\triangle ABC$ is a triangle with sides $BC = 10$ cm, $CA = 12$ cm and $AB = 11$ cm. $\triangle ABC$ is enlarged to $\triangle A'B'C'$ such that the smallest side of $\triangle A'B'C'$ is 30 cm. Find the corresponding lengths of the enlarged triangle $\triangle A'B'C'$.

(i) 30 cm, 36 cm, 33 cm (ii) 32 cm, 38 cm, 35 cm (iii) 29 cm, 35 cm, 32 cm (iv) 31 cm, 37 cm, 34 cm
(v) 28 cm, 34 cm, 31 cm

11. $AB = 15.00$ cm, $BC = 10.00$ cm are the measurements of a rectangular field of land ABCD on a map drawn to a scale of 1 : 13000. Calculate the diagonal distance of the field.

(i) 1.34 km (ii) 2.34 km (iii) 4.34 km (iv) 3.34 km (v) 0.34 km

12. $AB = 13.00$ cm, $BC = 5.00$ cm are the measurements of a rectangular field of land ABCD on a map drawn to a scale of 1 : 16000. Calculate the area of the field.

(i) 2.66 sq.km (ii) 9.66 sq.km (iii) 1.66 sq.km (iv) 3.66 sq.km (v) 0.66 sq.km

13. The measurements of a triangular field $\triangle ABC$ are $BC = 14$ cm, $AB = 15$ cm and $\angle ABC = 90^\circ$ on a map drawn to a scale of 1 : 24000. Calculate the actual length of CA in km.

(i) 4.92 km (ii) 3.92 km (iii) 6.92 km (iv) 5.92 km (v) 2.92 km

14. The measurements of a triangular field $\triangle ABC$ are $BC = 11$ cm, $AB = 15$ cm and $\angle ABC = 90^\circ$ on a map drawn to a scale of 1 : 23000. Calculate the actual area of the plot in sq.km.

(i) 6.36 sq.km (ii) 5.36 sq.km (iii) 3.36 sq.km (iv) 2.36 sq.km (v) 4.36 sq.km

15. A triangle having an area 26.91 sq.cm is reduced by a scale factor of 0.78. Find the area of its image.

(i) 21.37 sq.cm (ii) 19.37 sq.cm (iii) 16.37 sq.cm (iv) 11.37 sq.cm (v) 13.37 sq.cm

16. A triangle having an area 57.68 sq.cm is reduced such that the area of its image is 14.42 sq.cm. Find the scale factor.

(i) 7.5 (ii) 0.5 (iii) 8.5 (iv) 1.5 (v) 2.5

17. A rectangle having an area 70.00 sq.cm is reduced by a scale factor of 0.25. Find the area of its image.
(i) 6.38 sq.cm (ii) 5.38 sq.cm (iii) 3.38 sq.cm (iv) 4.38 sq.cm (v) 2.38 sq.cm
18. A rectangle having an area 180.00 sq.cm is reduced such that the area of its image is 80.80 sq.cm. Find the scale factor.
(i) 2.67 (ii) 1.67 (iii) 8.67 (iv) 7.67 (v) 0.67
19. A model of a ship is made to a scale of 1 : 85. If length of the model ship is 18 m, calculate the length of the ship.
(i) 1750.00 m (ii) 1600.00 m (iii) 1530.00 m (iv) 1390.00 m (v) 1380.00 m
20. A model of a ship is made to a scale of 1 : 195. If the length of the ship is 975 m, calculate length of the model ship.
(i) 3.00 m (ii) 7.00 m (iii) 6.00 m (iv) 4.00 m (v) 5.00 m
21. A model of a ship is made to a scale of 1 : 185. If the area of the deck of the model ship is 324 sq.m, calculate the area of the deck of the ship.
(i) 11088900.00 sq.m (ii) 11388900.00 sq.m (iii) 9488900.00 sq.m (iv) 13388900.00 sq.m
(v) 8588900.00 sq.m
22. A model of a ship is made to a scale of 1 : 130. If the area of the deck of the ship is 67600 sq.m, calculate the area of the deck of the model ship.
(i) 6.00 sq.m (ii) 3.00 sq.m (iii) 2.00 sq.m (iv) 5.00 sq.m (v) 4.00 sq.m
23. A model of a ship is made to a scale of 1 : 105. If the volume of the model ship is 512 cu.m, calculate the volume of the ship.
(i) 598704000.00 cu.m (ii) 564704000.00 cu.m (iii) 592704000.00 cu.m (iv) 588704000.00 cu.m
(v) 614704000.00 cu.m
24. A model of a ship is made to a scale of 1 : 110. If the volume of the ship is 7762392000 cu.m, calculate the volume of the model ship.
(i) 5782.00 cu.m (ii) 5962.00 cu.m (iii) 5832.00 cu.m (iv) 5992.00 cu.m (v) 5572.00 cu.m
25. The dimensions of the model of a multi-storey building are 3.5 cm × 4 cm × 1 cm. If the model is drawn to a scale of 1 : 165, find the actual dimensions of the building.
(i) 577.5 cm × 660 cm × 166 cm (ii) 578.5 cm × 661 cm × 165 cm (iii) 578.5 cm × 660 cm × 165 cm
(iv) 577.5 cm × 660 cm × 165 cm (v) 577.5 cm × 661 cm × 165 cm
26. The dimensions of the model of a multi-storey building are 5 cm × 3.5 cm × 6 cm. If the model is drawn to a scale of 1 : 95, find the floor area of a room of the building whose area in the model is 169 sq.cm.
(i) 158.52 sq.m (ii) 150.52 sq.m (iii) 169.52 sq.m (iv) 152.52 sq.m (v) 134.52 sq.m
27. The dimensions of the model of a multi-storey building are 10 cm × 9 cm × 8.5 cm. If the model is drawn to a scale of 1 : 155, find the volume of the room in the model whose actual volume is 8181.3534 cu.m.
(i) 2217.00 cu.cm (ii) 2077.00 cu.cm (iii) 2027.00 cu.cm (iv) 2197.00 cu.cm (v) 2327.00 cu.cm
28. A model of building is made with a scale factor of 1 : 50. Find the actual height of the building if the height of the model is 7 cm.
(i) 4.50 m (ii) 3.50 m (iii) 5.50 m (iv) 2.50 m (v) 1.50 m

29. A model of building is made with a scale factor of 1 : 100. Find the volume of the tank on the top of the model if its actual volume is 42875000 cu.cm.

- (i) 43.88 cu.cm (ii) 44.88 cu.cm (iii) 41.88 cu.cm (iv) 42.88 cu.cm (v) 40.88 cu.cm

Assignment Key

1) (i)	2) (v)	3) (iii)	4) (i)	5) (iii)	6) (v)
7) (v)	8) (iii)	9) (i)	10) (i)	11) (ii)	12) (iii)
13) (i)	14) (v)	15) (iii)	16) (ii)	17) (iv)	18) (v)
19) (iii)	20) (v)	21) (i)	22) (v)	23) (iii)	24) (iii)
25) (iv)	26) (iv)	27) (iv)	28) (ii)	29) (iv)	