EduSahara™ Assignment

Name : Similarity as a Size Transformation

Chapter : Similarity

Grade : ICSE Grade IX

1. △ABC is a triangle with sides BC = 12 cm, CA = 11 cm and AB = 14 cm. △ABC is reduced to △A'B'C' such that the smallest side of △A'B'C' is 7.86 cm. Find the scale factor.

   (i) $\frac{3}{7}$ (ii) $\frac{5}{9}$ (iii) $\frac{5}{7}$ (iv) 1

2. △ABC is a triangle with sides BC = 11 cm, CA = 13 cm and AB = 12 cm. △ABC is enlarged to △A'B'C' such that the smallest side of △A'B'C' is 24.75 cm. Find the corresponding lengths of the enlarged triangle △A'B'C'.

   (i) 25.75 cm, 30.25 cm, 28 cm (ii) 23.75 cm, 28.25 cm, 26 cm (iii) 24.75 cm, 29.25 cm, 27 cm

   (iv) 22.75 cm, 27.25 cm, 25 cm (v) 26.75 cm, 31.25 cm, 29 cm

3. AB = 20.00 cm, BC = 12.00 cm are the measurements of a rectangular field of land ABCD on a map drawn to a scale of 1 : 14000. Calculate the diagonal distance of the field.

   (i) 1.27 km (ii) 2.27 km (iii) 5.27 km (iv) 3.27 km (v) 4.27 km

4. AB = 20.00 cm, BC = 17.00 cm are the measurements of a rectangular field of land ABCD on a map drawn to a scale of 1 : 5000. Calculate the area of the field.

   (i) 1.85 sq.km (ii) 2.85 sq.km (iii) 7.85 sq.km (iv) 0.85 sq.km (v) 8.85 sq.km

5. The measurements of a triangular field △ABC are BC = 7 cm, AB = 6 cm and ∠ABC = 90° on a map drawn to a scale of 1 : 19000. Calculate the actual length of CA in km.

   (i) 1.75 km (ii) 2.75 km (iii) 0.75 km (iv) 9.75 km (v) 3.75 km

6. The measurements of a triangular field △ABC are BC = 12 cm, AB = 14 cm and ∠ABC = 90° on a map drawn to a scale of 1 : 22000. Calculate the actual area of the plot in sq.km.

   (i) 2.07 sq.km (ii) 6.07 sq.km (iii) 3.07 sq.km (iv) 4.07 sq.km (v) 5.07 sq.km

7. A triangle having an area 57 sq.cm is enlarged by a scale factor of 2.00. Find the area of its image.

   (i) 244.98 sq.cm (ii) 250.98 sq.cm (iii) 227.98 sq.cm (iv) 202.98 sq.cm (v) 215.98 sq.cm

8. A triangle having an area 100.4 sq.cm is reduced such that the area of its image is 6.27 sq.cm. Find the scale factor.

   (i) 7.25 (ii) 1.25 (iii) 0.25 (iv) 2.25 (v) 8.25

9. A rectangle having an area 342.00 sq.cm is enlarged by a scale factor of 3.50. Find the area of its image.

   (i) 4039.50 sq.cm (ii) 4189.50 sq.cm (iii) 4369.50 sq.cm (iv) 4419.50 sq.cm (v) 3949.50 sq.cm

10. A rectangle having an area 130.00 sq.cm is reduced such that the area of its image is 89.56 sq.cm. Find the scale factor.

    (i) 8.83 (ii) 0.83 (iii) 2.83 (iv) 7.83 (v) 1.83

11. A model of a ship is made to a scale of 1 : 185. If length of the model ship is 12 m, calculate the length of the ship.

    (i) 2090.00 m (ii) 2220.00 m (iii) 2340.00 m (iv) 1970.00 m

12. A model of a ship is made to a scale of 1 : 115. If the length of the ship is 2185 m, calculate length of the model ship.

(i) 19.00 m (ii) 24.00 m (iii) 22.00 m (iv) 16.00 m (v) 14.00 m

13. A model of a ship is made to a scale of 1 : 90. If the area of the deck of the model ship is 49 sq.m, calculate the area of the deck of the ship.

(i) 383900.00 sq.m (ii) 408900.00 sq.m (iii) 384900.00 sq.m (iv) 411900.00 sq.m (v) 396900.00 sq.m

14. A model of a ship is made to a scale of 1 : 140. If the area of the deck of the ship is 3312400 sq.m, calculate the area of the deck of the model ship.

(i) 156.00 sq.m (ii) 183.00 sq.m (iii) 177.00 sq.m (iv) 169.00 sq.m

15. A model of a ship is made to a scale of 1 : 70. If the volume of the model ship is 343 cu.m, calculate the volume of the ship.

(i) 103649000.00 cu.m (ii) 139649000.00 cu.m (iii) 117649000.00 cu.m (iv) 91649000.00 cu.m

(v) 124649000.00 cu.m

16. A model of a ship is made to a scale of 1 : 160. If the volume of the ship is 5451776000 cu.m, calculate the volume of the model ship.

(i) 1291.00 cu.m (ii) 1401.00 cu.m (iii) 1511.00 cu.m (iv) 1331.00 cu.m (v) 1091.00 cu.m

17. The dimensions of the model of a multi-storey building are 1 cm × 6 cm × 1 cm. If the model is drawn to a scale of 1 : 85, find the actual dimensions of the building.

(i) 86 cm × 511 cm × 85 cm (ii) 85 cm × 511 cm × 85 cm (iii) 85 cm × 510 cm × 86 cm

(iv) 86 cm × 510 cm × 85 cm (v) 85 cm × 510 cm × 85 cm

18. The dimensions of the model of a multi-storey building are 3 cm × 9.5 cm × 8 cm. If the model is drawn to a scale of 1 : 80, find the floor area of a room of the building whose area in the model is 100 sq.cm.

(i) 59.00 sq.m (ii) 67.00 sq.m (iii) 64.00 sq.m (iv) 69.00 sq.m (v) 61.00 sq.m

19. The dimensions of the model of a multi-storey building are 6 cm × 1.5 cm × 9.5 cm. If the model is drawn to a scale of 1 : 135, find the volume of the room in the model whose actual volume is 843.9086 cu.m.

(i) 343.00 cu.cm (ii) 350.00 cu.cm (iii) 330.00 cu.cm (iv) 361.00 cu.cm (v) 337.00 cu.cm

20. A model of building is made with a scale factor of 1 : 40. Find the actual height of the building if the height of the model is 7.5 cm.

(i) 1.00 m (ii) 2.00 m (iii) 3.00 m (iv) 4.00 m (v) 5.00 m

21. A model of building is made with a scale factor of 1 : 90. Find the volume of the tank on the top of the model if its actual volume is 157464000 cu.cm.

(i) 215.00 cu.cm (ii) 214.00 cu.cm (iii) 218.00 cu.cm (iv) 216.00 cu.cm (v) 217.00 cu.cm

Assignment Key

1) (iii)	2) (iii)	3) (iv)	4) (iv)	5) (i)	6) (iv)
7) (iii)	8) (iii)	9) (ii)	10) (ii)	11) (ii)	12) (i)
13) (v)	14) (iv)	15) (iii)	16) (iv)	17) (v)	18) (iii)
19) (i)	20) (iii)	21) (iv)			