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 = 13 cm and AB = 11 cm. △ABC is reduced to △A'B'C' such that the smallest side of △A'B'C' is 5.5 cm. Find the scale factor.

   (i) 1 (ii) $\frac{1}{4}$ (iii) $\frac{1}{2}$ (iv) $\frac{3}{2}$ (v) $(\frac{-1}{2})$

2. △ABC is a triangle with sides BC = 10 cm, CA = 14 cm and AB = 15 cm. △ABC is enlarged to △A'B'C' such that the smallest side of △A'B'C' is 50 cm. Find the corresponding lengths of the enlarged triangle △A'B'C'.

   (i) 52 cm, 72 cm, 77 cm (ii) 49 cm, 69 cm, 74 cm (iii) 48 cm, 68 cm, 73 cm (iv) 51 cm, 71 cm, 76 cm

   (v) 50 cm, 70 cm, 75 cm

3. AB = 12.00 cm, BC = 6.00 cm are the measurements of a rectangular field of land ABCD on a map drawn to a scale of 1 : 20000. Calculate the diagonal distance of the field.

   (i) 4.68 km (ii) 0.68 km (iii) 3.68 km (iv) 2.68 km (v) 1.68 km

4. AB = 15.00 cm, BC = 7.00 cm are the measurements of a rectangular field of land ABCD on a map drawn to a scale of 1 : 21000. Calculate the area of the field.

   (i) 3.63 sq.km (ii) 2.63 sq.km (iii) 5.63 sq.km (iv) 6.63 sq.km (v) 4.63 sq.km

5. The measurements of a triangular field △ABC are BC = 14 cm, AB = 7 cm and ∠ABC = 90° on a map drawn to a scale of 1 : 17000. Calculate the actual length of CA in km.

   (i) 0.66 km (ii) 4.66 km (iii) 2.66 km (iv) 3.66 km (v) 1.66 km

6. The measurements of a triangular field △ABC are BC = 10 cm, AB = 12 cm and ∠ABC = 90° on a map drawn to a scale of 1 : 24000. Calculate the actual area of the plot in sq.km.

   (i) 4.46 sq.km (ii) 2.46 sq.km (iii) 5.46 sq.km (iv) 1.46 sq.km (v) 3.46 sq.km

7. A triangle having an area 131.14 sq.cm is enlarged by a scale factor of 1.67. Find the area of its image.

   (i) 340.75 sq.cm (ii) 359.75 sq.cm (iii) 382.75 sq.cm (iv) 387.75 sq.cm (v) 365.75 sq.cm

8. A triangle having an area 63.53 sq.cm is enlarged such that the area of its image is 344.89 sq.cm. Find the scale factor.

   (i) 4.33 (ii) 3.33 (iii) 1.33 (iv) 0.33 (v) 2.33

9. A rectangle having an area 342.00 sq.cm is enlarged by a scale factor of 1.80. Find the area of its image.

   (i) 1278.08 sq.cm (ii) 888.08 sq.cm (iii) 1248.08 sq.cm (iv) 1108.08 sq.cm (v) 968.08 sq.cm

10. A rectangle having an area 156.00 sq.cm is enlarged such that the area of its image is 624.00 sq.cm. Find the scale factor.

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

11. A model of a ship is made to a scale of 1 : 160. If length of the model ship is 10 m, calculate the length of the ship.

    (i) 1670.00 m (ii) 1730.00 m (iii) 1480.00 m (iv) 1600.00 m (v) 1540.00 m

12. A model of a ship is made to a scale of 1 : 70. If the length of the ship is 910 m, calculate length of the model ship.

(i) 13.00 m (ii) 16.00 m (iii) 8.00 m (iv) 18.00 m (v) 10.00 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 225 sq.m, calculate the area of the deck of the ship.

(i) 1842500.00 sq.m (ii) 1822500.00 sq.m (iii) 1692500.00 sq.m (iv) 1962500.00 sq.m

(v) 1582500.00 sq.m

14. A model of a ship is made to a scale of 1 : 175. If the area of the deck of the ship is 6890625 sq.m, calculate the area of the deck of the model ship.

(i) 237.00 sq.m (ii) 213.00 sq.m (iii) 200.00 sq.m (iv) 231.00 sq.m (v) 225.00 sq.m

15. A model of a ship is made to a scale of 1 : 140. If the volume of the model ship is 8 cu.m, calculate the volume of the ship.

(i) 21952000.00 cu.m (ii) 21552000.00 cu.m (iii) 23452000.00 cu.m (iv) 19652000.00 cu.m

(v) 23152000.00 cu.m

16. A model of a ship is made to a scale of 1 : 65. If the volume of the ship is 94196375 cu.m, calculate the volume of the model ship.

(i) 320.00 cu.m (ii) 340.00 cu.m (iii) 357.00 cu.m (iv) 355.00 cu.m (v) 343.00 cu.m

17. The dimensions of the model of a multi-storey building are 3 cm × 6 cm × 5.5 cm. If the model is drawn to a scale of 1 : 160, find the actual dimensions of the building.

(i) 480 cm × 960 cm × 880 cm (ii) 480 cm × 961 cm × 880 cm (iii) 480 cm × 960 cm × 881 cm

(iv) 481 cm × 961 cm × 880 cm (v) 481 cm × 960 cm × 880 cm

18. The dimensions of the model of a multi-storey building are 6 cm × 9 cm × 8 cm. If the model is drawn to a scale of 1 : 115, find the floor area of a room of the building whose area in the model is 4 sq.cm.

(i) 5.29 sq.m (ii) 4.29 sq.m (iii) 7.29 sq.m (iv) 3.29 sq.m (v) 6.29 sq.m

19. The dimensions of the model of a multi-storey building are 4 cm × 7.5 cm × 4 cm. If the model is drawn to a scale of 1 : 65, find the volume of the room in the model whose actual volume is 2197 cu.m.

(i) 7720.00 cu.cm (ii) 8060.00 cu.cm (iii) 7930.00 cu.cm (iv) 8000.00 cu.cm (v) 8260.00 cu.cm

20. A model of building is made with a scale factor of 1 : 60. Find the actual height of the building if the height of the model is 3.5 cm.

(i) 1.10 m (ii) 0.10 m (iii) 4.10 m (iv) 2.10 m (v) 3.10 m

21. A model of building is made with a scale factor of 1 : 50. Find the volume of the tank on the top of the model if its actual volume is 5359375 cu.cm.

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

Assignment Key

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