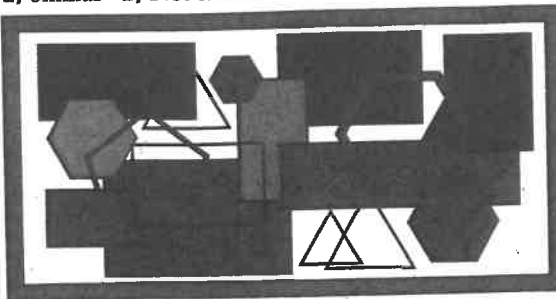


4.4 Similar Polygons, pages 157–159

3. a) Similar b) Not similar

4.

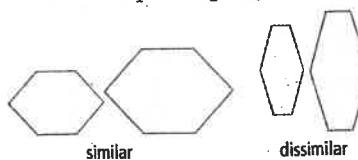


5. $x = 4$

6. $x = 2.8$ m

7. No. The corresponding angles must be the same.

8. a)



b) The two similar hexagons are similar to the photo because the interior angles are the same and the side lengths are related by a scale factor. The two dissimilar hexagons do not have these properties.

9. The side length of the game board will be 15.0 cm.

10. a) 7.5 m b) 1080° . Example: An octagon can be divided into six non-overlapping triangles.

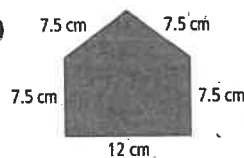
11. a) The final enlargement should be 6 times the size of the original diagram. b) The corresponding angles are equal, and the dimensions are all enlarged by the same proportion.

12. 39.3 cm

13. 14.1 cm

14. a) $\frac{1}{20}$

b)



c) $\text{length}_{\text{model}} = 15$ cm, $\text{width}_{\text{model}} = 12$ cm

15. 19 250 L

16. The ratio of areas to the ratio of corresponding side lengths in similar polygons is equal to the scale factor comparing side lengths squared.

17. The volume ratio is the same as the side ratio cubed.

18. a) The similar polygons have 7 sides, so they are heptagons. b) Example: Each heptagon is a reduction of the centre heptagon, with the scale factor decreasing with distance from the centre.