

LESSON 160

1. B, C, D

A parallelogram has no reflectional symmetry. A trapezoid has no reflectional symmetry and no rotational symmetry. A kite has no rotational symmetry.

2. 3 lines of symmetry

3. $360/3 = 120^\circ$

4. $\overline{X'Y'}$

5. $(-2, -4)$

6. $(x, y) \rightarrow (x + 2, y - 1)$

7. $\overline{YY'}$ and $\overline{ZZ'}$

8. $(3, 6)$

9. y -axis or $x = 0$

10. $\angle YCY'$ and $\angle ZCZ'$

11. $(6, 3)$

12. 270°

13. $X'Y' = 5XY = 5(2) = 10$

14. $(6, -12)$

15. 4

16. Let k = scale factor

$kAB = A'B'$

$8k = 12$

$k = 3/2$

Use k to find x .

$x = B'C' = kBC$

$= (3/2)12 = 18$

A dilation produces similar figures, so you could set up and solve the proportion $AB/A'B' = BC/B'C'$ to find x .

17. A, B, C

18. A, B, C, D

19. A, D

20. The translation maps $P(3, -6)$ to $P'(0, -6)$.

The reflection maps $P'(0, -6)$ to $P''(0, -6)$.

So, the final image is $(0, -6)$.

21. The dilation maps $P(3, -6)$ to $P'(1, -2)$.

The rotation maps $P'(1, -2)$ to $P''(-1, 2)$.

The final image is $(-1, 2)$.

22. *Answers may vary. Sample(s):*

a reflection over the y -axis followed by

a translation of 1 unit left and 5 units down

23. *Answers may vary. Sample(s):*

a dilation about the origin by scale factor $5/2$

followed by a translation of 1 unit down

24. a translation by the rule $(x, y) \rightarrow (x, y - 2)$; A

composition of translations is a translation.

25. a rotation of 180° about the origin; A composition of reflections over two intersecting lines is a rotation.

26. A, B, E