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. 180/3 = 60°

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   -> Use k to find x.

    $kAB = A'B'$ $x = B'C' = kBC$

    $8k = 12$ = (3/2)12 = 18

    $k = 3/2$

    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