9.2 Translation Practice

1. Draw the translation of the triangle \(HOT\) six units left and one unit down. Label the image \(H'O'T'\).

2. Find the translation of the quadrilateral \(WXYZ\) under the translation vector \((-2, -4)\).

3. What is the translation vector of the translation shown below.

4. What vector describes the translation \(A\rightarrow B\)?

5. What vector describes the translation \(C\rightarrow D\)?

6. What vector describes the translation \(E\rightarrow A\)?

7. What is the image of \(A\) under the translation \((1, -3)\)?

8. What is the image of \(D\) under the translation \((2, 1)\)?

9. What is the image of \(C\) under the translation \((1, 4)\)?

10. What is the image of \(B\) under the translation \((5, 2)\)?
Graph the image of the figure using the transformation given.

11. reflection across \( x = -1 \)

12. reflection across the \( y \)-axis

13. reflection across \( y = 2 \)

14. reflection across the \( x \)-axis

15. A. Find the slope of line \( AB \). \( A(3, 5) \) and \( B(2, 7) \) ____________

B. Find the slope of line \( CD \). \( C(-6, 9) \) and \( D(-4, 10) \) ____________

C. Are lines \( AB \) and \( CD \) parallel, perpendicular or neither? ____________

16. A. Find the slope of line \( AB \). \( A(-3, 8) \) and \( B(2, 11) \) ____________

B. Find the slope of line \( CD \). \( C(-6, -6) \) and \( D(1, -10) \) ____________

C. Are lines \( AB \) and \( CD \) parallel, perpendicular or neither? ____________

17. Sally scans a 6-inch picture into her computer. She stretches the picture’s length to 10 inches. Find the scale factor she used.
18. Will enlarges a 3 inch by 5 inch photograph by 2.5 times. What are the dimensions of the enlarged photograph?

19. The point N(3, -1) is rotated **180° about the origin**. What is the image of P? (Give the ordered pair)

20. Point K(-4, 3) is rotated 270° about the origin. What are the coordinates of K’?

21. What type of dilation occurs with a scale factor of \( \frac{6}{5} \)?

22. Sam’s old graphing calculator had 120 pixels across the screen. His new calculator has 150 pixels. Find the scale factor by which he increased his screen size.

23. The point Y with coordinates (-4, 3) is rotated about the origin to Y’ (-3, -4). How many degrees was the point rotated?

24. Find the coordinates of X’ with X(4, 8) for a dilation centered at the origin with a scale factor of 3.

25. A photo originally measuring 24 inches by 18 inches needs to be reduced to a size of 6 by 4.5 inches. Find the scale factor of the reduced photo.

   **Work:**

   Scale factor ___________
Answers:

3. \( (6, 2) \)
5. \( (11, -8) \)
7. \( (6, 3) \)
9. \( (-6, 6) \)

15. \(-2, \frac{1}{2}\), perpendicular
17. \( \frac{5}{3} \)
19. \( P(-3, 1) \)

21. Enlargement
23. \( 90^\circ \)
25. \( \frac{6}{24} = \frac{1}{4} \), scale factor = \( \frac{1}{4} \)