Unit 6: Transformations of Functions

PRACTICE · SET 2

Name: _____ Date: _____

Show each step and write your final answer in the exact form requested (a number, fraction, or coordinate pair).

1. The graph of f(x) is shifted RIGHT 4 units and UP 3 units to make g(x). If a point on f(x) is (2, 5), what is the corresponding point on g(x)? Give a coordinate pair.

Answer: _____

2. Let f(x) = x^2. The function g(x) = f(x - 5) + 2 is a translation of f. The vertex of f is (0, 0). What is the vertex of g? Give a coordinate pair.

Answer: _____

3. The point (3, -7) lies on y = f(x). Find the corresponding point on y = f(x) reflected across the x-axis. Give a coordinate pair.

Answer: _____

4. The point (-6, 2) lies on y = f(x). Find the corresponding point on y = f(-x) (reflection across the y-axis). Give a coordinate pair.

Answer: _____

5. The point (4, 3) lies on y = f(x). Find the corresponding point on y = 2·f(x) (vertical stretch by factor 2). Give a coordinate pair.

Answer: _____

6. The point (8, 5) lies on y = f(x). Find the corresponding point on y = f(x) after a horizontal compression so that its rule is y = f(2x). Give a coordinate pair.

Answer: _____

7. Is the function f(x) = x^3 - 4x even, odd, or neither? Answer with one word: even, odd, or neither.

Answer: _____

8. Is the function f(x) = x^2 + 5 even, odd, or neither? Answer with one word: even, odd, or neither.

Answer: _____

9. For f(x) = x^4 - 3x^2 + 1, compute f(-2). (This checks the even-function value.) Give a number.

Answer: _____

10. The graph of f(x) = |x| is transformed to g(x) = |x| - 6 (shift down 6). What is the y-value of g at x = 0? Give a number.

Answer: _____

11. Let g(x) = f(x + 3) where f(x) = x^2. Compute g(1). Give a number.

Answer: _____

12. The point (5, 4) lies on y = f(x). After the transformation y = -f(x) + 1 (reflect across x-axis, then shift up 1), find the corresponding point. Give a coordinate pair.

Answer: _____