

Polynomial Function Transformations

- _____ 1. Which of the following is a translation of the function $f(x) = 7x^2 - 9x - 4$ to the right 8 units?
- a. $g(x) = 7x^2 - 9x + 4$ c. $g(x) = 7x^2 - 9x - 12$
b. $g(x) = 7x^2 - 121x + 516$ d. $g(x) = 7x^2 + 103x + 372$
- _____ 2. Which translation of the function $f(x) = 2x^2 + 3x - 7$ results in the function $g(x) = 2x^2 - 17x + 28$?
- a. left 5 units c. up 5 units
b. down 5 units d. right 5 units
- _____ 3. Which transformation of the function $f(x) = 8x^2 - 4x - 4$ results in the function $g(x) = 32x^2 - 8x - 4$?
- a. horizontal shrink by a factor of $1/2$
b. vertical stretch by a factor of 2
c. horizontal stretch by a factor of 2
d. vertical shrink by a factor of $1/2$
- _____ 4. Which of the following functions is a transformation of a horizontal stretch by a factor of 4 to the function $f(x) = 64x^2 - 16x + 8$?
- a. $g(x) = 16x^2 - 4x + 2$ c. $g(x) = 4x^2 - 4x + 8$
b. $g(x) = 1024x^2 - 64x + 8$ d. $g(x) = 256x^2 - 64x + 32$
- _____ 5. Which of the following is a coordinate location for a reflection over the y-axis of the function $f(x) = -2x^2 - 4x - 9$?
- a. $(-11, -295)$ c. $(-13, -398)$
b. $(-5, -78)$ d. $(-7, -134)$

- _____ 6. Which of the following is a translation of the function $f(x) = -3x^2 + 9x - 6$ down 5 units?
- a. $g(x) = -3x^2 + 39x - 126$ c. $g(x) = -3x^2 + 9x - 1$
b. $g(x) = -3x^2 - 21x - 36$ d. $g(x) = -3x^2 + 9x - 11$
- _____ 7. Which translation of the function $f(x) = -7x^2 - 7x + 4$ results in the function $g(x) = -7x^2 + 105x - 388$?
- a. left 8 units c. down 8 units
b. right 8 units d. up 8 units
- _____ 8. Which transformation of the function $f(x) = -27x^2 - 6x + 6$ results in the function $g(x) = -243x^2 - 18x + 6$?
- a. vertical stretch by a factor of 3
b. horizontal stretch by a factor of 3
c. horizontal shrink by a factor of $1/3$
d. vertical shrink by a factor of $1/3$
- _____ 9. Which of the following functions is a transformation of a horizontal shrink by a factor of $\frac{1}{3}$ to the function $f(x) = -36x^2 - 6x - 12$?
- a. $g(x) = -108x^2 - 18x - 36$ c. $g(x) = -12x^2 - 2x - 4$
b. $g(x) = -4x^2 - 2x - 12$ d. $g(x) = -324x^2 - 18x - 12$
- _____ 10. Which of the following is a coordinate location for a reflection over the y-axis of the function $f(x) = 4x^2 + 5x + 6$?
- a. (6, 121) c. (5, 80)
b. (10, 356) d. (9, 284)

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Answer Section

1. ANS: B
2. ANS: D
3. ANS: A
4. ANS: C
5. ANS: A
6. ANS: D
7. ANS: B
8. ANS: C
9. ANS: D
10. ANS: B

