Level 1-Basic Nested Function

No Calculator

Khan Academy Link: https://www.khanacademy.org/math/algebra2/manipulating-functions/funciton-composition composition/v/new-function-from-composition

1. If
$$f(x) = 6x + 9$$
, what is $f(4x)$?
2. If $f(x) = -4x + 13$, what is $f(3x)$?

3. If
$$f(x) = -9x + 11$$
, what is $f(-2x)$?

4. If
$$f(x) = -3x + 3$$
, what is $f(-3x)$?

5. If
$$f(x) = -9x + 8$$
, what is $f(-2x)$?

6. If
$$f(x) = -4x + 7$$
, what is $f(-3x)$?

7. If
$$f(x) = -3x + 8$$
, what is $f(2x)$?

8. If
$$f(x) = 3x + 13$$
, what is $f(4x)$?

9. If
$$f(x) = -7x^2 + 7$$
, what is $f(-4x)$?

$$10.If f(x) = -5x^2 + 15$$
, what is $f(4x)$?

11. If
$$f(x) = -3x^2 + 3$$
, what is $f(4x)$?

12. If
$$f(x) = 4x^2 + 10$$
, what is $f(-3x)$?

13. If
$$f(x) = 9x^2 + 9$$
, what is $f(2x)$?

14. If
$$f(x) = 2x^2 + 8$$
, what is $f(-2x)$?

15. If
$$f(x) = -2x^2 + 6$$
, what is $f(-3x)$?

Answer

$$1.f(4x) = 24x + 9$$

$$2.f(3x) = -12x + 13$$

$$3.f(-2x) = 18x + 11$$

$$4.f(-3x) = 9x + 3$$

$$5.f(-2x) = 18x + 8$$

$$6.f(-3x) = 12x + 7$$

$$7.f(2x) = -6x + 8$$

$$8.f(4x) = 12x + 13$$

$$9.f(-4x) = -112x^{2} + 7$$

$$10.f(4x) = -80x^{2} + 15$$

$$11.f(4x) = -48x^{2} + 3$$

$$12.f(-3x) = 36x^{2} + 10$$

$$13.f(2x) = 36x^{2} + 9$$

$$14.f(-2x) = 8x^{2} + 8$$

 $15. f(-3x) = -18x^2 + 6$