

Use the given functions to describe the listed transformations. Then write the equation of the transformed function.

$$f(x) = 3x - 2$$

$$g(x) = -2x + 4$$

$$h(x) = 5$$

19. $f(2x)$

$$\begin{aligned} & 3(2x) - 2 \\ f(2x) &= 6x - 2 \end{aligned}$$

20. $2 * f(x)$

$$\begin{aligned} & 2(3x - 2) \\ 2f(x) &= 6x - 4 \end{aligned}$$

21. $f(x) - 2$

$$\begin{aligned} & 3x - 2 - 2 \\ f(x) - 2 &= 3x - 4 \end{aligned}$$

22. $f(x + 2)$

$$\begin{aligned} f(x + 2) &= 3(x + 2) - 2 \\ &= 3x + 6 - 2 \\ &= 3x + 4 \end{aligned}$$

23. $g(-x)$

$$\begin{aligned} g(-x) &= -2(-x) + 4 \\ &= 2x + 4 \end{aligned}$$

24. $\frac{1}{2} * g(x)$

$$\begin{aligned} \frac{1}{2}g(x) &= \frac{1}{2}(-2x + 4) \\ &= -x + 2 \end{aligned}$$

25. $g(x) + 5$

$$\begin{aligned} g(x) + 5 &= -2x + 4 + 5 \\ &= -2x + 9 \end{aligned}$$

26. $g(x - 5)$

$$\begin{aligned} g(x - 5) &= -2(x - 5) + 4 \\ &= -2x + 10 + 4 \\ &= -2x + 14 \end{aligned}$$

27. $f(\frac{1}{2}x)$

$$\begin{aligned} f(\frac{1}{2}x) &= 3(\frac{1}{2}x) - 2 \\ &= \frac{3}{2}x - 2 \end{aligned}$$

28. $-3 * g(x)$

$$\begin{aligned} -3g(x) &= -3(-2x + 4) \\ &= 6x - 12 \end{aligned}$$

29. $h(x) - 4$

$$\begin{aligned} h(x) - 4 &= 5 - 4 \\ &= 1 \end{aligned}$$

30. $h(x + 6)$

$$\begin{aligned} h(x + 6) &= 0x + 5 \\ &= (x + 6)0 + 5 \\ &= 5 \end{aligned}$$

31. $h(2x)$

$$\begin{aligned} h(2x) &= 0x + 5 \\ &= 2x(0) + 5 \\ &= 5 \end{aligned}$$

32. $2 * h(x)$

$$2h(x) = 10$$

33. $f(x) - 3$

$$\begin{aligned} f(x) - 3 &= 3x - 2 - 3 \\ &= 3x - 5 \end{aligned}$$