

Circle the correct option and give the function name.

1) Translated 1 unit down

$$f(x) = 4^x - 1$$

2) Reflected over the x-axis

$$f(x) = -(4^x)$$

$$f(x) = -4^x$$

3) Vertically stretched by 2

$$f(x) = 2(4^x)$$

4) Vertically compressed by 2

$$f(x) = 4^{\frac{1}{2}x}$$

5) Translated 1 unit to the left

$$f(x) = 4^{x+1}$$

6) Reflected over the y-axis

$$f(x) = 4^{1-x}$$

7) Vertically compressed by  $\frac{1}{2}$

$$f(x) = \frac{1}{2}(4^x)$$

8) Vertically compressed by  $\frac{1}{4}$

$$f(x) = \frac{1}{4}(4^x)$$

Circle the correct option and give the function name.

1) Translated 3 units down and vertically

$$f(x) = 4 \log_4(x^2 - 2) - 3$$

2) Reflected over the x-axis

$$f(x) = -4 \log_4 x^2$$

3) Vertically stretched by 4

$$f(x) = 4 \log_4 x^2$$

4) Vertically compressed by 2

$$f(x) = 2 \log_4(x^2)$$

5) Vertically compressed by  $\frac{1}{2}$

$$f(x) = 2 \log_4(\frac{1}{2}x^2)$$

6) Translated 3 units to the left and vertically

$$f(x) = 4 \log_4(x^2 + 3) + 3$$

7) Vertically stretched by 4

$$f(x) = 4 \log_4(x^2)$$

8) Vertically compressed by  $\frac{1}{2}$

$$f(x) = \frac{1}{2} 4 \log_4 x^2$$

9) Vertically compressed by  $\frac{1}{4}$

$$f(x) = \frac{1}{4} \log_4(x^2)$$

10) Translated 3 units to the left and vertically

$$f(x) = 4 \log_4(x^2 - 3) + 3$$