Name in English

Graph Logarithmic Functions

For the following functions identify the translations.

1. $f(x) = 6\log_{\frac{1}{8}}(x+2)$

Horizontal translation

a) 2 units to right.
b) 2 units to left.
c) No horizontal translation.

Vertical translation

a) 6 units up
b) 6 units down
c) No vertical translation

Shape

a) Graph is stretched vertically by 6 units.
b) Graph is compressed vertically by 6 units.
c) Neither stretched nor compressed.

Orientation

a) The graph is reflected across the x-axis.
b) No reflection.

2. $f(x) = -8\log_3(x-4)$

Horizontal translation

a) 4 units to right.
b) 4 units to left.
c) No horizontal translation.

Vertical translation

a) 4 units up
b) 4 units down
c) No vertical translation

Shape

a) Graph is stretched vertically by 8 units.
b) Graph is compressed vertically by 8 units.
c) Neither stretched nor compressed.

Orientation

a) The graph is reflected across the x-axis.
b) No reflection.

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3. $f(x) = \log_5(x-4) - 5$

Horizontal translation

a) 4 units to right.
b) 4 units to left.
c) No horizontal translation.

Vertical translation

a) 5 units up
b) 5 units down
c) No vertical translation

Shape

a) Graph is stretched vertically by 5 units.
b) Graph is compressed vertically by 5 units.
c) Neither stretched nor compressed.

Orientation

a) The graph is reflected across the x-axis.
b) No reflection.

4. $f(x) = -\frac{1}{4}\log_8(x+3) + 4$

Horizontal translation

a) 3 units to right.
b) 3 units to left.
c) No horizontal translation.

Vertical translation

a) 4 units up
b) 4 units down
c) No vertical translation

Shape

a) Graph is stretched vertically by ¼ units.
b) Graph is compressed vertically by ¼ units.
c) Neither stretched nor compressed.

Orientation

a) The graph is reflected across the x-axis.
b) No reflection.

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