## 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.

LIVEWORKSHEETS

**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.

LIVEWORKSHEETS