1.2 Function Notation Day 1 Guided Notes

Learning Target: To be able to write functions in function notation and find functional values

Function Notation:

\[ y = 3x - 8 \]

\[ f(x) = 3x - 8 \]

**f(x) is read as The function of \( x \) or \( f \) of \( x \).**

Write the following equations in function notation.

1) \( y = -2x - 9 \)
2) \( y = 4x - 7 \)
3) \( y = -4x + 14 \)
4) \( y = \frac{4}{5}x + 3 \)

\[ f(y) = -2x - 9 \]
\[ f(x) = 4x - 7 \]
\[ g(x) = -4x + 14 \]
\[ h(x) = \frac{4}{5}x + 3 \]

Finding Function Values

Given the following functions, find each value.

\[ f(x) = 3x + 7 \]
\[ g(x) = x^2 - 2x \]

5) \( f(3) \)
6) \( g(-3) \)

\[ f(3) = 3(3) + 7 = 16 \]
\[ g(-3) = (-3)^2 - 2(-3) = 15 \]
Given the following functions, find each value.

\[ f(x) = 3x + 7 \]

7) \( f(-2) - 4 \)

\[ \frac{3(-2) + 7}{-1 - 4} = \frac{-5}{-5} = -1 \]

8) \( 3g(5) \)

\[ \frac{5^2 - 2(5)}{\sqrt{15}} = \frac{15}{\sqrt{15}} = 16 \]

9) \( f(k + 2) \)

\[ \frac{3(k + 2) + 7}{3k + 6 + 7} = \frac{3k + 13}{3k + 13} = -1 \]

10) \( g(2c) \)

\[ \frac{(2c)^2 - 2(2c)}{4c^2 - 4c} = \frac{4c^2 - 4c}{4c^2 - 4c} = -2 \]

11) If \( h(x) = 3x + 1 \), find \( x \) if \( h(x) = 28 \)

\[ 3x + 1 = 28 \]

\[ x = 9 \]

The graph to the right is \( f(x) = 3^x \).

12) If \( f(x) = 8x - 6 \), find \( x \) if \( f(x) = -2 \)

\[ 8x - 6 = -2 \]

\[ x = \frac{1}{2} \]

13) When \( f(x) = 27 \), what is \( x \)?

\[ 3^x = 27 \]

\[ 3^3 = 27 \]

\[ x = 3 \]