2.3 Function Notation

Study 2.3 # 1-35, 41,
67-73, 81, 87(opt)

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2.3 Function Notation

$$\text{Given:} \quad y = 3x + 1$$

What is m? ____3____

y-intercept? __(0, 1)__

What about: $f(x) = 3x + 1$

What is m? ____3____

f-intercept? __(0, 1)__

2.3 Function Notation

Def: Function Notation

The dependent variable of a function *f* can be represented by the expression formed by writing the independent variable within the parentheses of *f( )* :

dependent variable = *f* (independent variable)
                eg: y = *f(x)*

Enables more specific notation:

G: f(x) = 3x + 1   F: f(2)

Instead of:

G: y = 3x + 1   F: Let x = 2 and find y.

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2.3 Function Notation

Evaluating a Function

G: f(x) = 3x + 1   F: f(2)
f( ) = 3( ) + 1   placeholder
f(2) = 3(2) + 1   substitute
f(2) = 6 + 1 = 7   simplify

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2.3 Function Notation

Evaluating a Function

G: f(x) = 6x -4   F: f(-2)

f(   ) = 6(   ) - 4   placeholder

f(-2) = 6(-2) - 4   substitute

f(-2) = -12 - 4   simplify

      = -16

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2.3 Function Notation

Evaluating a Function

G: f(x) = 6x -4   F: f(5/2)

f(   ) = 6(   ) - 4   placeholder

f(5/2) = 6(   ) - 4   substitute

f(5/2) = (   )/2 - 4   simplify

= 15 - 4 = 11

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2.3 Function Notation

Evaluating a Function

G: f(x) = 6x -4   F: f(5/2)

f(   ) = 6(   ) - 4   placeholder

f(5/2) = 6(5/2) - 4   substitute

f(5/2) = (30/2) - 4   simplify

= 15 - 4 = 11

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Evaluating a Function

G: f(x) = 6x -4   F: f(a-2)

f(   ) = 6(   ) - 4   placeholder

f(a-2) =6(   ) - 4   substitute

f(a-2) = _____   DP

f(a-2) = _____   simplify

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2.3 Function Notation

Evaluating a Function

G: f(x) = 6x -4   F: f(a-2)

f(   ) = 6(   ) - 4   placeholder

f(a-2) = 6(a-2) - 4   substitute

f(a-2) = 6a -12- 4   DP

f(a-2) = 6a -16   simplify

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2.3 Function Notation

Finding Intercepts:

G: $f(x) = -\dfrac{3}{4}x + \dfrac{1}{2}$ F: x-interc, y-interc

Y-intercept: x = 0

$f(0) = -\dfrac{3}{4}(0) + \dfrac{1}{2} = 0 + \dfrac{1}{2} = \dfrac{1}{2}$

⭐ y - interc: (0, 1/2) ⭐

X-intercept: y = 0 or f(x) = 0

$f(x) = -\dfrac{3}{4}x + \dfrac{1}{2} = 0$ LCD = 4

Multiply by 4:

-3 x + 2 = 0

-3x = -2

x = 2/3

⭐x-interc:⭐
⭐(2/3, 0)⭐

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Interpreting Functions:

p. 86 #82

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