

6-6 Composite Functions

(Two Funfilled Functions Wrapping into One Amazing Function!)



Notation

$$(g \circ f) = g(f(x))$$

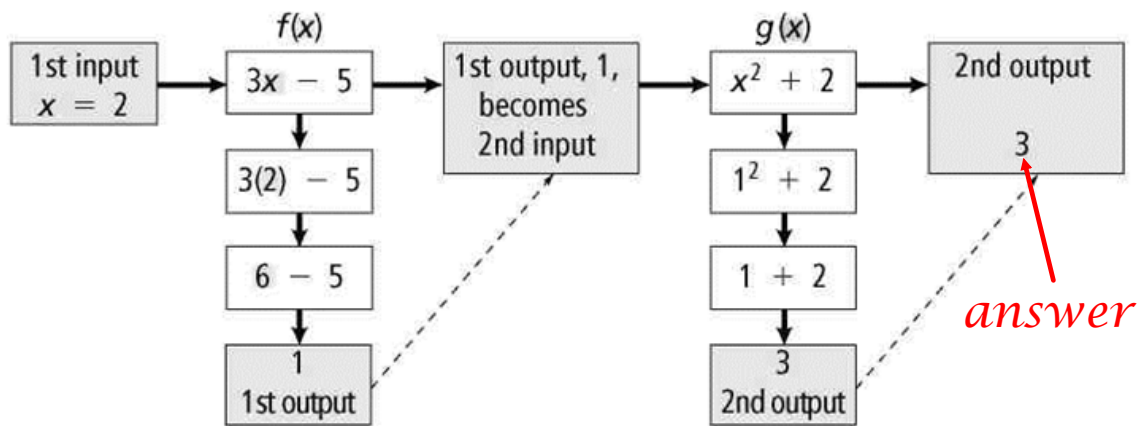
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...is read "g of f of x."

When evaluating, work from the inside out.

Don't write...just watch.

Evaluate $g(f(2))$ given $f(x) = 3x - 5$ and $g(x) = x^2 + 2$.



... Now write:

Evaluate $g(f(2))$ given $f(x) = 3x - 5$ and $g(x) = x^2 + 2$.

Examples to try:

$$\text{Let } f(x) = x - 2 \text{ and } g(x) = x^2.$$

$$\#1 \quad (f \circ g)(-1)$$

$$\#2 \quad g(f(-1))$$

-1

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#3

A car dealer offers a 15% discount off the list price x of any car on the lot. At the same time, the manufacturer offers a \$1000 rebate for each purchase of a car.

a. Write a function $f(x)$ to represent the price after discount.

b. Write a function $g(x)$ to represent the price after the \$1000 rebate.

c. Suppose the list price of a car is \$18,000. Use a composite function to find the price of the car if the discount is applied before the rebate.

d. Suppose the list price of a car is \$18,000. Use a composite function to find the price of the car if the discount is applied after the rebate.

e. **Reasoning** Between parts (c) and (d), will the dealer want to apply the discount before or after the rebate? Why?

Attachments

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