

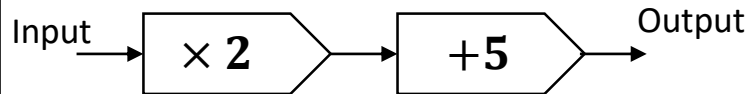


Timester Challenge

Functions



A function is represented by the following function machine.



1) The number 3 is input into the machine. Calculate the output.

2) A number is input into the machine. The output is used as the new input. The second output is 27.

Work out the number that was the first input.

Bronze ★

If $h(x) = 2x - 3$, find $h(14)$.

Silver ★

Use the function rule to find $f(12)$.

$$f(x) = \frac{x}{4} + 5$$

Silver ★

Solve for x .

$$g(x) = 3x + 5; g(x) = 26$$

Gold ★

Solve for x .

$$f(x) = \sqrt{x + 4} - 2; f(x) = -8$$

Gold ★



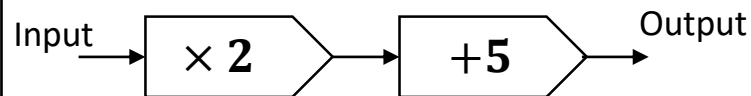
Timester Challenge

Functions

Answers



A function is represented by the following function machine.



1) The number 3 is input into the machine. Calculate the output.

$$\begin{aligned}3 \times 2 + 5 \\= 6 + 5 \\= 11\end{aligned}$$

2) A number is input into the machine. The output is used as the new input. The second output is 27.

Work out the number that was the first input. $\text{Input } 2 = \frac{27-5}{2} = 11$

$$\text{Input } 1 = \frac{11-5}{2} = 3$$

The first input was 3

Bronze ★

If $h(x) = 2x - 3$, find $h(14)$.

$$\begin{aligned}h(14) &= 2 \times 14 - 3 \\&= 28 - 3 \\&= 25\end{aligned}$$

Silver ★

Solve for x .

$$g(x) = 3x + 5; g(x) = 26$$

$$3x + 5 = 26$$

$$3x = 26 - 5$$

$$3x = 21$$

$$x = \frac{21}{3} = 7$$

Gold ★

Use the function rule to find $f(12)$.

$$f(x) = \frac{x}{4} + 5$$

$$f(12) = \frac{12}{4} + 5$$

$$= 3 + 5$$

$$= 8$$

Silver ★

Solve for x .

$$f(x) = \sqrt{x+4} - 2; f(x) = -8$$

$$\sqrt{x+4} - 2 = -8$$

$$\sqrt{x+4} = -6$$

$$x + 4 = -6^2$$

$$x + 4 = 36$$

$$x = 32$$

Gold ★