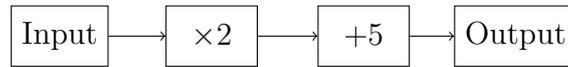# Functions Basics
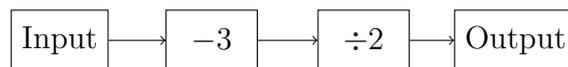
Question 1. A number is input into a function machine. The machine multiplies it by 2 and then adds 5. What is the output if the input is 6?

$$\boxed{\text{Input}} \longrightarrow \boxed{\times 2} \longrightarrow \boxed{+5} \longrightarrow \boxed{\text{Output}}$$

[2 marks]

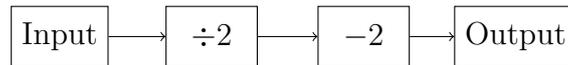**Question 2.** A function machine first subtracts 3, then divides by 2. What is the output if the input is 10?

$$\boxed{\text{Input}} \longrightarrow \boxed{-3} \longrightarrow \boxed{\div 2} \longrightarrow \boxed{\text{Output}}$$

[2 marks]

Question 3. A machine squares the number, then adds 1. What is the output when the input is 4?

$$\boxed{\text{Input}} \longrightarrow \boxed{\text{square}} \longrightarrow \boxed{+1} \longrightarrow \boxed{\text{Output}}$$

[2 marks]

Question 4. A machine takes a number, halves it, and then subtracts 2. Find the output if the input is 12.

| Input | $\div 2$ | -2 | Output |

[2 marks]

Question 5. An input of 9 produces an output of 20. The machine multiplies the number and adds something. What could the function rule be?

[2 marks]

Question 6. An input of 4 gives an output of 11. The machine doubles the number and adds something. What is the function?

[2 marks]

Question 7. If $f(x) = x + 3$, find $f(5)$

[2 marks]

Question 8. If $f(x) = 2x$, find $f(7)$

[2 marks]

Question 9. If $f(x) = x - 4$, find $f(10)$

[2 marks]

Question 10. If $f(x) = x^2$, find $f(6)$

[2 marks]

Question 11. If $f(x) = 3x + 2$, find $f(4)$

[2 marks]

Question 12. If $f(x) = \dfrac{x}{2}$, find $f(8)$

[2 marks]

Question 13. If $f(x) = \sqrt{x}$, find $f(25)$

[2 marks]

Question 14. If $f(x) = 10 - x$, find $f(3)$

[2 marks]

Question 15. Describe a function that turns 3 into 11.

[2 marks]

Question 16. Describe a function that turns 7 into 0.

[2 marks]

Question 17. A machine turns 2 into 7 and 4 into 11. What could the function be?

[2 marks]

Question 18. A function turns 5 into 25. What kind of function is this?

[2 marks]

Question 19. The output of a machine is always 1 less than double the input. Write a function rule for this.

[2 marks]

Question 20. A function takes a number, squares it, then subtracts 4. Write a rule for the function and evaluate it for input 3.

[2 marks]