# INPUT - OUTPUT TABLES *ANSWERS*

**Complete each input-output table.**

1.

| Input | Output |
|---|---|
| 1 | 3 |
| 3 | **7** |
| 5 | **11** |
| 6 | **13** |

Rule: Multiply by 2, add 1

2.

| *x* | *y* |
|---|---|
| 18 | **7.2** |
| 22 | 8.8 |
| 36 | **14.4** |
| **50** | 20 |

Rule: Divide by 2.5

3.

| *x* | *y* |
|---|---|
| 1 | 7 |
| **2** | 9 |
| 4 | **13** |
| 6 | **17** |

Rule: Multiply by 2, add 5

**Find the rule and complete each input-output table.**

**Helpful Example**

| *x* | *y* |
|---|---|
| 1 | 5 |
| 3 | 9 |
| 4 | 11 |

Rule:?

THIS **INPUT-OUTPUT TABLE** HAS A TWO-STEP RULE. THE EASIEST WAY TO FIND IT IS TO CALCULATE HOW THE **x** AND **y** CHANGE.

| *x* | | *y* | |
|---|---|---|---|
| 1 | | 5 | |
| 3 | **+ 2** | 9 | **+ 4** |

$$\mathbf{4} \div \mathbf{2} = \boxed{2}$$

DIVIDE THE CHANGE IN **y** BY THE CHANGE IN **x**, WHICH MAKES 2. THIS TELLS US THAT **y** IS CHANGING TWICE AS FAST AS **x**. SO **y** = 2**x**.

BUT 1 x 2 = 2, NOT 5. HOW DOES 2 CHANGE TO 5? HOW ABOUT ADDING 3? SO THE RULE MIGHT BE:
MULTIPLY BY 2, ADD 3.
TRY THIS ON THE OTHER VALUES TO SEE IF IT IS CORRECT.

$3 \times 2 = 6 + 3 = 9$ ✓

$4 \times 2 = 8 + 3 = 11$ ✓

Rule: Multiply by 2, add 3 ✓

**Now your turn.**

4.

| *x* | *y* |
|---|---|
| 0 | 3 |
| 1 | 11 |
| 2 | **19** |
| 3 | **27** |

Rule: **Multiply by 8, add 3**

5.

| *x* | *y* |
|---|---|
| 2 | 8 |
| 6 | **10** |
| 10 | 12 |
| **14** | 14 |

Rule: **Divide by 2, add 7**

6.

| *x* | *y* |
|---|---|
| **1** | 3 |
| 3 | 13 |
| 7 | **33** |
| 10 | 48 |

Rule: **Multiply by 5, subtract by 2**

7. William is paid 50% more money than Harold, and receives an additional $2,500 sales bonus at the end of every year. Below is an input-output table showing the total amount each person made over the past 7 years. Complete the table by filling in the empty spaces.

| | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
|---|---|---|---|---|---|---|---|---|
| Input | Harold's wages | $25,000 | $28,000 | $31,000 | **$35,000** | $38,000 | **$39,000** | $42,000 |
| Output | William's wages | $40,000 | **$44,500** | **$49,000** | $55,000 | $59,500 | $61,000 | **$65,500** |