Solutions

Each answer shows the steps, then the **result**.

2.1

- `23 MOD 4` is **3**
- `8 MOD 8` is **0**
- `3 MOD 10` is **3**

2.2

- `6 / 2` is 3, then `3 * 3` is 9, then `10 - 9` is **1**

2.3

- `n MOD 2 = 1`

2.4

- `4728 MOD 10` is **8**, the last digit

3.1 A

- `17 MOD 3` is 2 and `2 * 3` is 6; then `2 + 6` is 8

3.2 A

- `b ← 12 MOD 5` is 2; `a ← 12 / 2` is 6
- `DISPLAY(6 + 2)` shows **8**

3.3 B

- a multiple of 4 leaves **remainder 0** when divided by 4

3.4

(a)

- `extra ← pens MOD 12`

(b)

- subtract the leftover first, so the division is whole
- `packs ← (pens - extra) / 12`

(c)

- `extra ← 50 MOD 12` is **2**
- `packs ← (50 - 2) / 12` is **4**

3.5 B

- an algorithm must finish and must accomplish its task

3.6

(a)

- selection: step 3 (the “if”)
- iteration: step 2 (the “repeat for each”)

(b)

- **3** (62, 50 and 91 are at least 50)

(c)

- for example: others can read and check the logic before it is written in a particular programming language