Solutions

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

2.1

- (i) **integer**
- (ii) **real** (float)
- (iii) **Boolean**
- (iv) **string**: it holds letters and a hyphen

2.2

- (i) **3**
- (ii) **2**
- (iii) **3.4**

2.3

- (i) **8**
- (ii) indexes 2 to 5: `"2027"`
- (iii) **6**
- (iv) the last character, `"S"`

2.4

- (i) **syntax**
- (ii) **logic**: it runs but gives the wrong answer
- (iii) **runtime**: an index error, as valid indexes are 0 to 4

3.1 B

- `+` joins two strings

3.2 B

- indexes 2, 3, 4: `t`, `h`, `o`

3.3 D

- `int` cannot convert text with a decimal point

3.4
(a)

`t`	`count`	`total`	`high`
`"18"`	0	0	-100
	1	18	18
`"23"`	2	41	23
`"19"`	3	60	23
`"x"`			

- `count` and `total` correct
- `high` correct
- loop ends at `x`
- output **20.0 23**

(b)

- the loop body never runs, so `count` is 0
- `total / count` divides by zero: a **`ZeroDivisionError`**, and nothing is printed

(c)

- `int("twenty")` raises a `ValueError`
- put the cast inside `try`
- the `except ValueError` block prints a message and asks again instead of stopping

(d)

- normal: e.g. 21
- boundary: -40 or 50
- invalid: e.g. 51, -41 or `"abc"`