

Solutions

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

2.1

- 80: $80 \geq 80$ is true: **A**
- 59: both tests false: **C**

2.2

- **no**: the outer test is true, so the **ELSE** block containing it never runs

2.3

- `IF((x > 0) AND (x < 10)) { DISPLAY("digit") }`

2.4

- $5 > 5$ false, $5 < 5$ false: **same**

3.1 B

- **rain** is true, so the inner test runs; $40 > 50$ is false: **umbrella**

3.2 D

- 90 passes the first test and gets **"pass"**; the $\text{mark} \geq 75$ test is never reached, so it should be merit

3.3 B

- **award** is set only when the outer **and** the inner tests are both true

3.4

(a) one correct answer:

```
IF(age < 4)
{
    price ← 0
}
ELSE
{
    IF(age ≤ 15)
    {
        IF(isWeekend) { price ← 25 }
        ELSE { price ← 20 }
    }
    ELSE
    {
        IF(isWeekend) { price ← 40 }
        ELSE { price ← 30 }
    }
}
```

- $\text{age} < 4$ gives 0 on every day
- age bands in a working order, with 4–15 separated from 16+
- weekend test **nested** in each band
- all four prices correct

(b)

- $16 \leq 15$ is false and **isWeekend** is true: **price** is **40**
- 16 is a **boundary** value: it shows whether the band edge is tested with the right operator