Solutions

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

2.1

- (i) **12**
- (ii) 5, 10, 15, 20: **4**

2.2

- `for (int i = 10; i >= 0; i -= 2) System.out.print(i + " ");`

2.3

- each `i` goes in **front**: `"1"`, `"21"`, prints **321**

2.4

```
int j = 7;
while (j > 0)
{
    System.out.print(j);
    j--;
}
```

- `j = 7` before and `j > 0` as the condition
- `j--` at the end of the body

3.1 A

- $2 + 4 + 6 = 12$; 8 fails `i < 8`

3.2 B

- `i` is 100, 50, 25, 12, 6, 3, 1: 7 values; then 0 fails

3.3 C

- 1, 3, 5, 7, 9; A misses 9, B prints evens too, D prints evens

3.4

(a)

```
for (int k = 1; k <= km; k++)
{
    System.out.println(k + ": " + (k + 5));
}
```

- loops from 1 to `km` inclusive
- split is `k + 5` (or a variable starting at 6, increased by 1)
- prints the kilometre and the split

(b)

- `int total = 0;` before the loop
- `total += k + 5;` inside the loop

(c)

- $6 + 7 + 8 + 9 = \mathbf{30}$