



# FUNCTIONAL SKILLS MATHEMATICS

AQA | Edexcel | City & Guilds | Open Awards | NCFE | Highfield

Entry Level 3

## Number Patterns

### Materials

- You **cannot** use a calculator for **questions** with this symbol.



### Instructions

- Answer **all** questions.
- Answer questions on separate paper.

### Information and Advice

- The marks for each question are shown in brackets – use this as a guide on how long to spend on each question.
- Read each question carefully before you answer it.
- Check you answers.

**Q1** Find the rule for these sequences:

**1(a)** 1, 4, 7, 10, ... [1 mark]

**1(b)** 15, 13, 11, 9, ... [1 mark]

**1(c)** 55, 61, 67, 73, ... [1 mark]

**1(d)** 180, 175, 170, 165, ... [1 mark]

**Q2** Find the rule for these sequences:

**2(a)** 2.2, 2.6, 3.0, 3.4, ... [1 mark]

**2(b)** 0.1, 0.4, 0.7, 1.0, ... [1 mark]

**2(c)** 6.6, 5.7, 4.8, 3.9, ... [1 mark]

**2(d)** 9.9, 9.7, 9.5, 9.3, ... [1 mark]

**Q3** Find the next term in these sequences:

**3(a)** 3, 6, 9, 12, ... [2 marks]

**3(b)** 13, 18, 23, 28, ... [2 marks]

Question continues on next page

**3(c)** 19, 15, 11, 7, ... **[2 marks]**

**3(d)** 120, 114, 108, 102, ... **[2 marks]**

**Q4** Find the next term in these sequences:

**4(a)** 11.2, 11.0, 10.8, 10.6, ... **[2 marks]**

**4(b)** 3.3, 4.0, 4.7, 5.4, ... **[2 marks]**

**4(c)** 1.2, 2.3, 3.4, 4.5, ... **[2 marks]**

**4(d)** 0.9, 0.7, 0.5, 0.3, ... **[2 marks]**

**Q5** John is playing a game in which he has to remove as many balls as he can from a box in a certain time. His friend counts how many balls are left each minute. After 4 minutes, he has the pattern 180, 145, 110, 75, ...

**5(a)** How many balls does John remove every minute? **[1 mark]**

**5(b)** How many balls will be remaining in the box after 5 minutes? **[1 mark]**

- Q6** Layla collects stamps. The number of stamps she has at the end of each month follows a pattern. At the end of January she has 23 stamps, at the end of February she has 27 stamps, at the end of March she has 31 stamps, and at the end of April she has 35 stamps.
- How many stamps will she have at the end of May?
- [2 marks]**
- Q7** Peter is trying to lose some weight. He measures his weight at the end of each month and notices that it follows a pattern. His weights are 91.2 kg, 87.8 kg, 84.4 kg, 81.0 kg.
- 7(a)** What is the rule for how much weight Peter loses each month?
- [1 mark]**
- 7(b)** Predict Peter's weight at the end of the 5<sup>th</sup> month.
- [1 mark]**
- Q8** Alfie measures his height at the end of each year. His heights follow a pattern. The first three heights are 1.32 m, 1.35 m, 1.38 m.
- How tall will Alfie be after the 4<sup>th</sup> year of measuring his height?
- [2 marks]**
- Q9** Deontay's hourly wage goes up by the same amount every year. In 2018 his hourly wage was £9.53, in 2019 his hourly wage was £9.84, and in 2020 his hourly wage was £10.15.
- Predict his hourly wage for 2021 and 2022.
- [3 marks]**
- Q10** Brett's car decreases in value by the same amount each year. If it was worth £3400 in 2015, £3150 in 2016, and £2900 in 2017, how much would you expect it to be worth in 2020?
- [3 marks]**