

# 1.1 Collaboration

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Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

Total: 9 marks

## Objective

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Build the skills to answer exam questions on **collaboration**.

You must be able to:

- explain how **collaboration** 协作 and diverse perspectives improve a solution and reduce **bias** 偏见
- apply **pair programming** 结对编程 (a driver and a navigator)
- describe giving and receiving constructive **feedback** 反馈
- explain why consulting **users** 用户 helps a program meet real needs

## 1 Worked examples

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Study these first. Each one shows the method for a question type used later.

### ■ Why collaborate

A team with **diverse perspectives** spots more problems, produces better solutions, and reduces **bias** that one person might miss.

### ■ Pair programming

Two people share one workstation: the **driver** types the code, and the **navigator** reviews it and suggests direction. They swap roles regularly.

### ■ Feedback and users

**Constructive feedback** during development catches issues early; consulting **users and stakeholders** keeps the program aimed at real needs.

## 2 Practice

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2.1 State one benefit of collaboration when developing a program. [1]

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2.2 Describe the two roles in pair programming. [2]

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2.3 State why consulting users helps a program. [1]

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### 3 Exam-style questions

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3.1 In pair programming, the person who types the code is the [1]

- A navigator
  - B driver
  - C tester
  - D manager
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3.2 Diverse perspectives in a team help to reduce [1]

- A speed
  - B bias
  - C cost
  - D memory use
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3.3 A team builds an app without asking any users for input.

(a) State one risk of doing this. [1]

(b) State one collaboration practice that would help. [1]

(c) State one benefit of that practice. [1]

### 4 Go further

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- work through the **1.1 Collaboration** lesson on the **Learn** page;
- read the **Creative Development** section of the AP Computer Science Principles handout on the **Know** page.

## Solutions

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**2.1** any one of: better solutions, fewer errors, reduced bias, more ideas.

**2.2** the driver types the code; the navigator reviews it and guides the direction.

**2.3** it keeps the program aimed at users' real needs.

**3.1 B.**

**3.2 B.**

**3.3** (a) the app may not meet users' real needs. (b) consult users, or use pair programming (any one). (c) fewer errors, or a program that better fits its purpose.