

Exercise walk-through

Boolean Expressions ■ 2.2

eXercise

You must be able to

- write a **Boolean expression** 布尔表达式 that evaluates to true or false
- use the **relational operators** 关系运算符 `<`, `<=`, `>`, `>=`, `==`, `!=`
- understand that `==` tests equality while `=` performs assignment

Method — Boolean expressions

A Boolean expression evaluates to true or false, built with **relational operators**:

- `5 == 5` is true (equality)
- `3 != 4` is true (not equal)
- `7 >= 7` is true

Method — '==' vs '='

`==` **tests** equality; `=` **assigns** a value. Confusing them is a common bug.

Practice 2.1 ■ 1 mark

State what a Boolean expression evaluates to.

Solution 2.1

Method: Boolean expressions

Worked steps

either true or false **B1**.

Practice 2.2 ■ 2 marks

State the difference between `==` and `=`.

Solution 2.2

Worked steps

`==` tests whether two values are equal; `=` assigns a value to a variable `B1` `B1`.

Practice 2.3 ■ 1 mark

Evaluate $7 \geq 7$.

Solution 2.3

Worked steps

true **B1**.

Exam-style 3.1 ■ 1 mark

Which operator tests equality?

A =

B ==

C !=

D <=

Solution 3.1

Method: '==' vs '='

A =

B ==



C !=

D <=

Worked steps

B.

Exam-style 3.2 ■ 1 mark

4 != 4 evaluates to

A true

B false

C 4

D an error

Solution 3.2

A true

B false



C 4

D an error

Worked steps

B.

Exam-style 3.3 ■ 1 mark

Given `int x = 6, y = 9`;

- (a) evaluate `x < y`.
- (b) evaluate `x == y`.
- (c) evaluate `x != y`.

Solution 3.3

Worked steps

(a) true **B1**. (b) false **B1**. (c) true **B1**.