

## Solutions

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

### 2.1

- reliability is consistency of results; validity is whether the test measures what it claims to

### 2.2

- administering the test to a representative sample so that later scores can be interpreted against that comparison group

### 2.3

(a)

- reliability

(b)

- validity

### 3.1 B

- a normal distribution clusters around the mean with symmetrical tails

### 3.2 B

- the situation, not the ability, has changed

### 3.3

(a)

- the comparison group may not represent the people being tested

(b)

- the difference could reflect test content, language, familiarity or stereotype threat rather than ability, so the score alone cannot identify a cause

### 3.4

(a)

- About **68%** (1); 85 and 115 are one standard deviation below and above the mean, and in a normal distribution roughly 68% of scores lie within one standard deviation of the mean (1)

(b)

- $r = 0.91$  across two administrations shows **test–retest reliability** — consistency of measurement (1).  $r = 0.62$  with a later outcome shows **predictive validity** — the test predicts what it claims to (1)

(c)

- **Fluid** intelligence is the ability to reason about novel problems, independent of learned knowledge, and it declines with age (1); **crystallised** intelligence is accumulated knowledge and skill, and it holds or increases with age. A reasoning test is more likely measuring **fluid** intelligence (1)

(d)

- Stereotype threat is the anxiety of confirming a negative stereotype about one's own group (1); that anxiety consumes working-memory capacity during the test, so performance falls even though underlying ability is unchanged