Solutions

Marking: **M1** a correct method, **A1** the correct answer, **B1** an independent mark.

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

2.1

no visible status: show “borrowing…” with a spinner

the message does not help: “This copy is already on loan. Reserve it?”

the work is lost: keep the inputs and mark only the wrong field

2.2

$(1.05)/(0.402 + 0.05) \approx \mathbf{2.32}$

fails: below $4.5 : 1$

2.3

give the box a visible `<label>` linked to it

give the icon button a text name, e.g. “Search”

show status in text as well as colour (“on loan”), and keep a visible focus outline

2.4

$1 - 0.69^{3}$

$\approx \mathbf{0.67}$, about two thirds

3.1

(a) $7/10 = \mathbf{70}\%$

(b) users expect to act from the book title; the renew button is hard to find or does not look like a button

(c) put a clear “Renew” button next to each loan, in the place users look; also offer renew on the book’s own page

(d) test the new design with a new group of about 5 users and the same task; compare the completion rate and time with the first round

3.2

(a) no: 14 px is normal text, which needs $4.5 : 1$

(b) $1.05/0.547 \approx \mathbf{1.92}$

(c) colour-blind and screen-reader users cannot see it; add a text message and an icon next to the field, linked to the input

3.3

(a) $1 - 0.69^{15} \approx \mathbf{99.6}\%$

(b) after round 1 the big problems are fixed, so round 2 can find problems those hid; each round also checks that the fixes work

(c) younger and older students, teachers and a librarian; at least one keyboard-only or screen-reader user

(d) three rounds of 5 users, fixing between rounds, with the same core tasks each time so results can be compared

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