Solutions

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

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

2.1

affordance: the actions that a design allows / suggests, e.g. a flat plate affords pushing; signifier: a signal that shows where or how to act, e.g. a "push" sign

2.2

poor mapping: the layout of the knobs does not match the layout of the burners; so users cannot tell which knob controls which burner; improvement: knobs arranged in a square like the burners / a burner diagram next to each knob

2.3

slip: the right intention but the wrong action; e.g. tapping "send" instead of the button next to it; mistake: the wrong goal or plan, from a poor mental model; e.g. sending money to a saved contact the user thought was someone else

2.4

feedback shows that an action has worked, e.g. a beep and "payment accepted" on the screen; so the user does not press again or pay twice / knows what to do next

2.5

Hick's law: each extra choice makes a decision slower, so 24 options are slow to scan; group the options into a few labelled categories / show the most-used options first; so users recognize what they need instead of holding many options in memory

3.1

(a) the user's own idea of how the product works, which they use to predict what will happen

(b) slip: the cancel and pay buttons are next to each other and look the same, so a user aiming at pay presses cancel; mistake: 12 similar ticket buttons with unclear labels, so a user who misunderstands the ticket types chooses the wrong one

(c) any two, explained: a summary screen of the chosen ticket and price before payment, so users can check (feedback); cancel asks "are you sure?" / is moved away from pay (constraint); pay is disabled until a ticket is chosen (constraint)

(d) award up to [7]: user trials use real passengers, including tourists, older people and people in a hurry; they show real errors and give measurable data, e.g. wrong tickets per 100 sales, time to buy; but they take time, need many users and informed consent; expert appraisal is quick and cheap and uses knowledge of usability principles; but experts are not typical users and may miss problems; judgement: use expert appraisal first to fix obvious problems, then user trials, because only trials show whether passengers' errors really fall