Solutions

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

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

2.1

bladder squeezes: **parasympathetic** pelvic splanchnic nerves, **S2–S4**

bladder neck closes: **sympathetic**, **T11–L2**

outer sphincter: **pudendal** nerve, **S2–S4**

2.2

the **ischial spine**

felt through the side wall of the vagina

2.3

the space between the uterus and rectum is the **rectouterine pouch**

it is the lowest part of the peritoneal cavity when upright, so fluid runs down into it

2.4

the ureter runs **under** the uterine artery

they cross close to the cervix

a clamp on the artery can catch or cut the ureter

3.1

(a) **stress** incontinence

(b) births stretched the pelvic floor muscles and supports, so when a cough raises belly pressure the urethra is not held closed

(c) pelvic floor muscle training, which makes the sling stronger so it closes the urethra when pressure rises

(d) the bladder muscle squeezes when it should not (overactive detrusor); an **antimuscarinic** drug blocks the parasympathetic signal

3.2

(a) the head pressed the pudendal nerve against the ischial spine

(b) the outer anal sphincter is torn; the risk is leaking stool or gas

(c) a pressed nerve usually recovers by itself, so wait and watch; a torn muscle does not join by itself and must be repaired

3.3

(a) the bladder cannot squeeze, so it fills, stretches and overflows (retention with overflow)

(b) squeeze the glans and feel the anal sphincter; here there is no contraction, because the S2–S4 arc is damaged

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(c) the S2–S4 centre still works but has lost brain control, so the bladder is small and empties by reflex, without warning

(d) less risk of infection than a tube left in, and the bladder is emptied before it overstretches