

Solutions

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

2.1

- addition polymerisation

2.2

- condensation polymerisation

3.1 A

- One C=C and nothing lost
- addition polymerisation

3.2 C

- Releasing a small molecule and having ester/amide links shows condensation

3.3

(a)

- addition — it has a C=C and nothing is lost

(b)

- condensation — two two-group monomers join, losing water
- polyester

(c)

- condensation — the amino acid has two groups ($-\text{NH}_2$ and $-\text{COOH}$), losing water
- polyamide

3.4

- an addition polymer has a saturated C–C backbone with no links (the repeat unit is just the monomer); a condensation polymer has ester or amide links along the chain, which can be hydrolysed back to two monomers