

Solutions

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

2.1

- genes are cut out with **restriction enzymes**

2.2

- the gene is joined into a plasmid by **(DNA) ligase**

3.1 A

- a plasmid carrying an inserted gene is a **recombinant plasmid**
- B is the cutting enzyme; C and D are not plasmids

3.2

(a)

- cut the human gene with **restriction enzymes**, leaving sticky ends
- cut a plasmid with the same enzyme and join with **ligase**
- put the recombinant plasmid into a bacterium, which **expresses the gene**

(b)

- any **one** of: concerns about **health** / effects on **wild species** / cost of GM seeds