Tessellations

6 questions | 10 marks

Equivalent correct methods earn the corresponding marks.

1. State the two conditions a repeating shape pattern must meet to be a tessellation. [2 marks]

Every part of the covered surface belongs to one tile, not zero tiles or two tiles.

Answer: No gaps and no overlaps.

2. Each equilateral triangle corner is 60°. How many meet to fill 360°? [1 mark]

$360^\circ \div 60^\circ = 6$.

Answer: 6

3. Each square corner is 90°. Show why four fit around a point. [1 mark]

Their corners fill one full turn.

Answer: $4 \times 90^\circ = 360^\circ$.

4. Each regular hexagon corner is 120°. How many must meet at a point? [1 mark]

$360^\circ \div 120^\circ = 3$.

Answer: 3

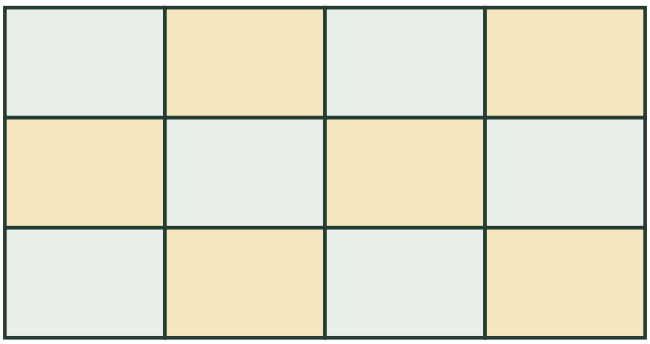
5. Three regular pentagon corners of 108° meet. Calculate the gap. [2 marks]

$3 \times 108^\circ = 324^\circ$.

$360^\circ - 324^\circ = 36^\circ$.

Answer: 36°

6. Draw a repeating tessellation of rectangles in the space. Show at least two rows and three columns. Explain how it continues. [3 marks]



No gaps and no overlaps

Repeat the same rectangle along a row.

Stack matching rows.

Continue in both directions.

Answer: Any correctly joined rectangular grid, at least 2 by 3, with matching edges and no gaps/overlaps.