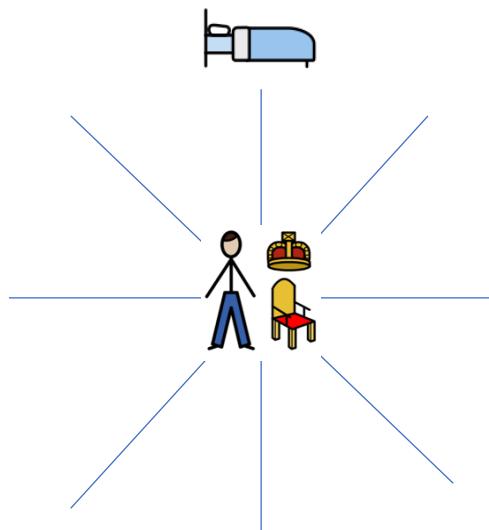


GEOMETRY: PROPERTIES OF SHAPE

NC. Objective: To use angle sum facts and other properties to make deductions about missing angles and use the properties of rectangles to find missing lengths and angles.

1. Use the clues listed below to label the diagram. King Leontes' bed has been labelled for you.

- Leontes is standing in the middle of his bedroom.
- He is facing his bed.
- He turns 180° and is facing the door.
- He then makes a 90° turn clockwise and is facing his wardrobe.
- He turns another 90° clockwise and then makes a three-quarter turn anticlockwise. He is now facing the mirror.



2. Polixenes spent some time studying a rectangular map of Sicily.

One angle on the map was marked 90° .

What are the sizes of the other three angles? Explain how you know.

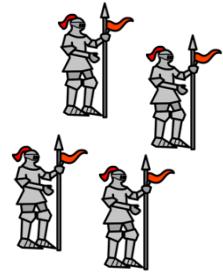


3. During King Leontes' inspection, the palace guards stood in a rectangular formation.

The formation was 8 guards wide and 5 guards deep.

Each guard needed $1m^2$ of space.

The guards were spaced 2m apart both horizontally and vertically.



- Draw a diagram to show the formation.
- Work out the length and width of the rectangle formed.
- Calculate the perimeter of the space they occupied.

4. Camillo often walked through a hidden passage shaped as a quadrilateral.

Three interior angles measured: 70° , 110° and 85° .



- Calculate the size of the fourth angle.
- Explain the rule you used to find your answer.

5. The throne platform is rectangular. Its length is 14m and the perimeter is 46m.

- Find the width of the platform.
- What are the sizes of all interior angles? Explain how you know.



6. In Bohemia, Perdita planned a rectangular set of garden paths for the shepherds to walk along.

There are:

- 6 path sections across
- 5 paths sections down
- Each path section covers $1m^2$
- There is a 1m gap between every section, both across and down.



- Draw a labelled diagram to show the layout of the paths.
- Work out the length and width of the rectangle formed by the whole layout.
- Calculate the perimeter of the entire garden path area.
- Explain how you know the shape must have four right angles.