Distances and dimensions

VOCABULARY PRACTICE

UPPER-INTERMEDIATE | B2

Name: _____ **Date:** _____

1 Match each spatial concept with its meaning.

1 clearance	____	a permitted variation from a specified measurement
2 span	____	b vertical position relative to a reference level
3 gradient	____	c ratio between width and height
4 elevation	____	d empty space needed around or above an object
5 cross-section	____	e straight-line change in position with direction
6 displacement	____	f closeness to another object or place
7 proximity	____	g total area or range occupied in space
8 spatial extent	____	h view produced by cutting across an object
9 aspect ratio	____	i slope expressed as a rate of rise or fall
10 dimensional tolerance	____	j distance from one support or end to another

2 Complete the spatial collocations.

clearance | **cross-section** | **elevation** | **extent** | **gradient** | **proximity** | **ratio** | **tolerance**

1 minimum _____

2 a steep _____

3 at a higher _____

4 in close _____ to

5 a longitudinal _____

6 spatial _____

7 within manufacturing _____

8 a width-to-height _____

3 Choose the most precise term for the context.

1 Space above a vehicle under a bridge: *clearance / elevation*.

2 A bridge reaches between two supports: *span / proximity*.

3 The road rises 10 m per 100 m: *gradient / aspect ratio*.

4 A slice through a pipe reveals its interior: *cross-section / extent*.

5 The final position differs from the start: *displacement / clearance*.

6 The screen is 16 units wide and 9 high: *aspect ratio / elevation*.

7 The part may vary by 0.1 mm: *dimensional tolerance / span*.

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4 Complete the engineering review with terms from the box.

aspect ratio | clearance | cross-section | dimensional tolerance | displacement | elevation | gradient | proximity | span | spatial extent

The bridge has a central **1** _____ of 120 m. Vehicles require sufficient vertical **2** _____ below it. The road approaches at a gentle **3** _____ and reaches a higher **4** _____. A structural **5** _____ reveals the beam profile. Sensors measure deck **6** _____ under load. Construction in close **7** _____ to buildings limits the site's **8** _____. Screen diagrams use a fixed **9** _____, and every component must remain within its **10** _____.

5 Read the text and answer the questions briefly.

Distance is not always a single value

The distance travelled along a winding route can be much greater than the straight-line displacement between its start and finish. A hiker may walk five kilometres around a valley but end only one kilometre from the starting point. Distance is a scalar quantity, while displacement includes direction. The distinction matters in navigation, physics and any analysis of movement.

1 Why may route distance exceed displacement? _____

2 How far does the hiker walk? _____

3 How far from the start does the hiker finish? _____

4 What kind of quantity is distance? _____

5 What additional feature does displacement include? _____

6 Where does the distinction matter? _____

6 Rewrite using the expression in capitals.

1 The bridge reaches 80 m between supports. **SPAN** _____

2 The road rises sharply. **GRADIENT** _____

3 The buildings stand very close together. **PROXIMITY** ___

4 The part stayed inside the permitted variation. **TOLERANCE** _

OVER TO YOU

Write a **120-150 word** technical description of a route, structure or component using spatial relationships and tolerances.

[ ] Use at least ten target terms. [ ] Distinguish distance from displacement. [ ] State dimensions precisely.

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ANSWER KEY

1 Spatial concepts

1 **d** 2 **j** 3 **i** 4 **b** 5 **h** 6 **e** 7 **f** 8 **g** 9 **c** 10 **a**

2 Spatial collocations

1 **clearance** 2 **gradient** 3 **elevation** 4 **proximity** 5 **cross-section** 6 **extent** 7 **tolerance** 8 **ratio**

3 Precise terms

1 **clearance** 2 **span** 3 **gradient** 4 **cross-section**
5 **displacement** 6 **aspect ratio** 7 **dimensional tolerance**

4 Engineering review

1 **span** 2 **clearance** 3 **gradient** 4 **elevation** 5 **cross-section**
6 **displacement** 7 **proximity** 8 **spatial extent** 9 **aspect ratio** 10 **dimensional tolerance**

5 Reading - suggested answers

1 The route winds. 2 Five kilometres. 3 One kilometre away. 4 A scalar quantity.
5 Direction. 6 Navigation, physics and movement analysis.

6 Rewriting - possible answers

1 Its **span** is 80 m. 2 The road has a steep **gradient**. 3 The buildings are in close **proximity**. 4 It remained within **tolerance**.

Over to you: Answers will vary. Check spatial precision, dimensional relationships and tolerances.