Coordinates, patterns and graphs - topic test

Name: _____ Date: _____

15 questions | 36 marks | 45 minutes

A progressive paper covering coordinates, pattern rules and graph interpretation.

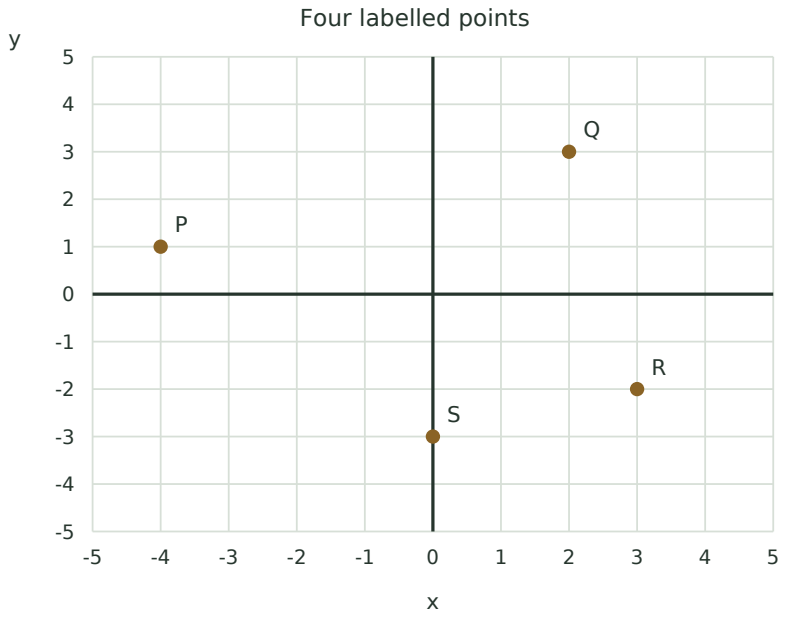
No calculator needed.

1. In (x, y), which coordinate records horizontal position? [1 mark]

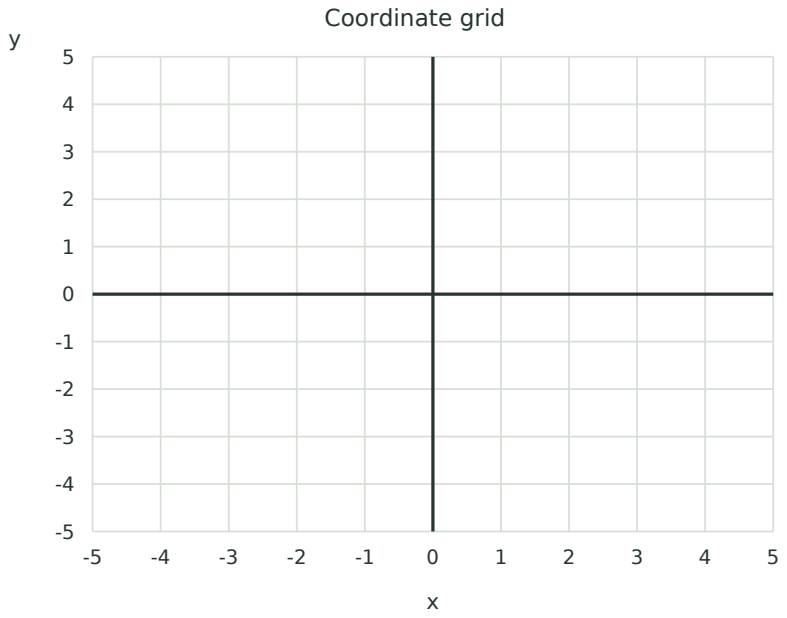
2. Which quadrant contains $(-4, -2)$? [1 mark]

3. Which axis contains $(0, 5)$? [1 mark]

4. Read Q and S in the supplied grid. [2 marks]



5. Plot $A = (-3, 2)$, $B = (4, -1)$ and $C = (0, -4)$. [3 marks]



6. For $y = 4n + 1$, find outputs at n=0,1,2. [3 marks]

7. A constant-addition table has outputs 5,8,11 at inputs 1,2,3. Give a simple rule and the output at input 6. [3 marks]

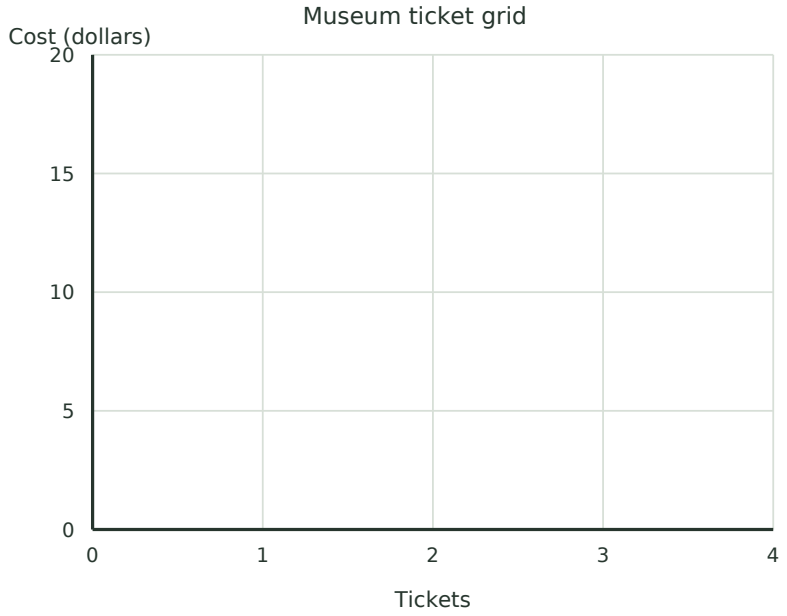
8. How many matchsticks are at stage 5 of the pictured square train? Explain. [3 marks]



Stage 1 Stage 2 Stage 3

9. A pattern has 7 dots at stage 1 and adds 4 each stage. Find stage 6. [2 marks]

10. Whole museum tickets cost 5 dollars each. Plot costs for 0,1,2,3 tickets. [3 marks]

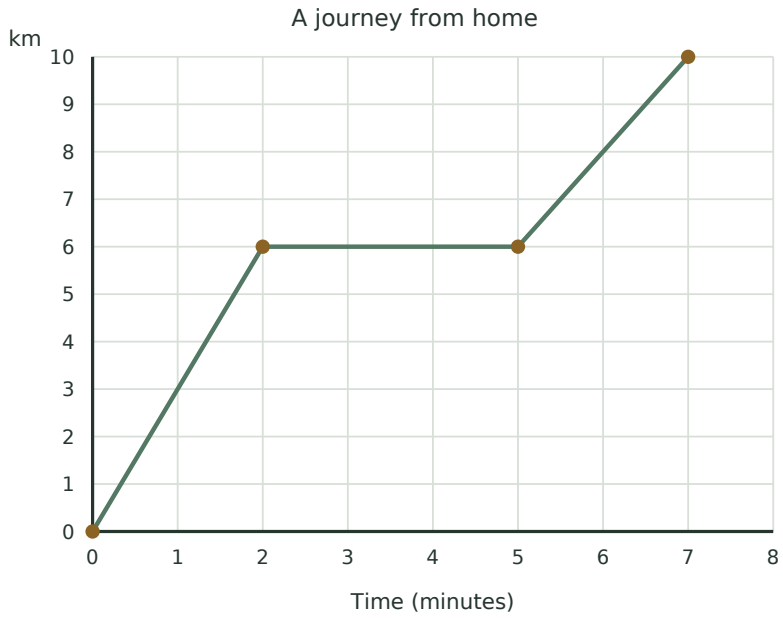


11. Classify each input as discrete or continuous. [2 marks]

(a) Number of whole books bought. [1 mark]

(b) Elapsed time while a tank fills steadily. [1 mark]

12. Use the supplied journey log. [3 marks]



Journey log supplied for this example

Time (min)	Distance from home (km)
0	0
2	6
5	6
7	10

(a) Give the distance from home at minute 2. [1 mark]

(b) How long does the distance remain at 6 km? [2 marks]

13. Cooling readings are 75,62,54,49°C at times 0,2,4,6 min. Identify the greatest two-minute fall and its interval. [3 marks]

14. Give a purchase example showing why not every plotted set should be joined. [2 marks]

15. Find a simple multiply-then-add rule matching (1,5),(2,7),(3,9), then find the input giving output 21. [4 marks]