

1. Plot the points (1,2), (2,4), (3,6) on a coordinate plane. Do they line up?

Plot each (x, y)

Check the pattern

Answer: Yes - a straight line

2. A graph is a full circle. Function or not? Why?

A vertical line through the middle hits twice

Answer: Not a function

3. A graph is a straight slanted line. Function or not?

Any vertical line crosses once

Answer: Function

4. Make a table for $y = x + 3$ using $x = 0, 1, 2, 3$, then plot the points.

$y = 3, 4, 5, 6$

Plot (0,3),(1,4),(2,5),(3,6)

Answer: Points on a line rising by 1

5. Make a table for $y = 2x - 1$ using $x = 0, 1, 2, 3$, then plot.

$y = -1, 1, 3, 5$

Answer: Line rising by 2

6. The graph of $y = x^2$: make a table with $x = -2, -1, 0, 1, 2$ and plot.

$y = 4, 1, 0, 1, 4$

Symmetric points

Answer: U-shape (parabola), vertex (0,0)

7. A 'V' shaped graph (absolute value). Function or not?

Vertical line test: one hit everywhere

Answer: Function

8. A graph is a sideways 'C'. Function or not?

A vertical line hits it twice

Answer: Not a function

9. Sketch $y = -x + 4$ from a table ($x = 0..4$). Where does it cross each axis? ★ challenge

Table: 4, 3, 2, 1, 0

Crosses y-axis at (0,4); x-axis at (4,0)

Answer: y-int (0,4), x-int (4,0)

10. Plot $y = x^2 - 4$ for $x = -3..3$. State where the graph crosses the x-axis. ★ challenge

Table: 5, 0, -3, -4, -3, 0, 5

Crossings where $y = 0$

Answer: $x = -2$ and $x = 2$