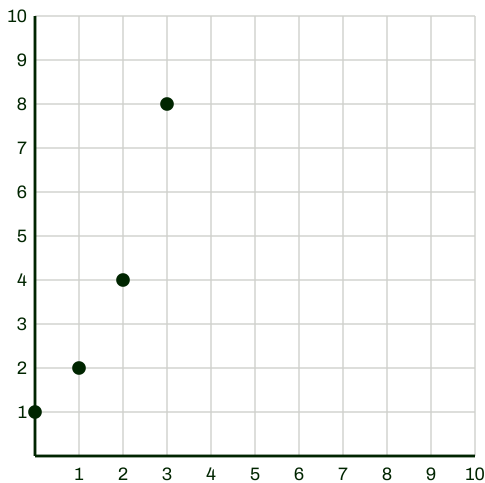


Distinguish a linear from a nonlinear function

NAME	DATE	SCORE / 10
------	------	------------

1 The graph shows four values of a function. Is the function linear or nonlinear?



- ☐ Nonlinear: the points do not lie on a straight line
 ☐ Linear: the points lie on a straight line
☐ Linear: y gets bigger each time x gets bigger

2 Which of these equations show a linear function?

Tick every answer that is true.

- ☐ **A** $y = 4 - 4x$
☐ **B** $y = x^2 + 4$
☐ **C** $y = 4x + 4$
☐ **D** $y = 5(x + 4)$
☐ **E** $y = x/5 + 4$

3 The table shows a function.

x: 0, 1, 2, 3

y: 3, 5, 7, 9

Is the function linear or nonlinear?

- ☐ Nonlinear: the rate of change is not constant
☐ Nonlinear: its graph does not pass through (0, 0) ☐ Linear: the rate of change is constant

4 Which of these equations show a linear function?

Tick every answer that is true.

- ☐ **A** $y = 4x + 7$
☐ **B** $y = 4x^3$
☐ **C** $y = x^2 + 7$
☐ **D** $y = 3(x + 7)$
☐ **E** $y = 3/x$

5 The table shows a function.

x: 0, 1, 2, 3

y: 1, 2, 5, 10

Is the function linear or nonlinear?

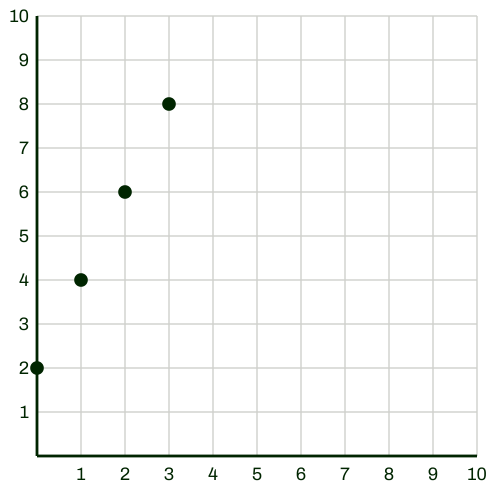
- ☐ Nonlinear: the rate of change is not constant
☐ Linear: y gets bigger each time x gets bigger ☐ Linear: the rate of change is constant

6 Which of these equations show a linear function?

Tick every answer that is true.

- ☐ **A** $y = x/4 + 3$
☐ **B** $y = 4(x + 3)$
☐ **C** $y = x^2 + 3$
☐ **D** $y = 6x + 3$
☐ **E** $y = 6x^3$

7 The graph shows four values of a function. Is the function linear or nonlinear?



- ☐ Nonlinear: the points do not lie on a straight line ☐ Linear: the points lie on a straight line
☐ Nonlinear: its graph does not pass through (0, 0)

8 Which of these equations show a linear function?

Tick every answer that is true.

- ☐ **A** $y = x/3 + 8$
☐ **B** $y = 8 - 5x$
☐ **C** $y = 5x^3$
☐ **D** $y = 3(x + 8)$
☐ **E** $y = 5x + 8$

9 Is the function $y = x + 3$ linear or nonlinear?

- ☐ Nonlinear: its graph does not pass through (0, 0) ☐ Linear: the rate of change is constant
☐ Nonlinear: the rate of change is not constant

10 Which of these equations show a linear function?

Tick every answer that is true.

☐ **A** $y = 4/x$

☐ **B** $y = x^2 + 3$

☐ **C** $y = 5x^3$

☐ **D** $y = 3 - 5x$

☐ **E** $y = 5x + 3$

Distinguish a linear from a nonlinear function

1 Nonlinear: the points do not lie on a straight line

3 Linear: the rate of change is constant

5 Nonlinear: the rate of change is not constant

7 Linear: the points lie on a straight line

9 Linear: the rate of change is constant

2 A, C, D, E

Tick exactly these: A: $y = 4 - 4x$; C: $y = 4x + 4$; D: $y = 5(x + 4)$; E: $y = x/5 + 4$. One missed or one extra is wrong.

4 A, D

Tick exactly these: A: $y = 4x + 7$; D: $y = 3(x + 7)$. One missed or one extra is wrong.

6 A, B, D

Tick exactly these: A: $y = x/4 + 3$; B: $y = 4(x + 3)$; D: $y = 6x + 3$. One missed or one extra is wrong.

8 A, B, D, E

Tick exactly these: A: $y = x/3 + 8$; B: $y = 8 - 5x$; D: $y = 3(x + 8)$; E: $y = 5x + 8$. One missed or one extra is wrong.

10 D, E

Tick exactly these: D: $y = 3 - 5x$; E: $y = 5x + 3$. One missed or one extra is wrong.