



Forming equations of horizontal and vertical lines

Mana Maths

Te reo Māori terms



huapae

horizontal line

Open in Te Aka

poutū

vertical line

Open in Te Aka

whārite

equation

Open in Te Aka

rōnaki

gradient

Open in Te Aka

Forming equations of horizontal and vertical lines — Foundation

Horizontal lines use $y = c$. Vertical lines use $x = c$.

1. Write the equation of the horizontal line through $(4, 3)$.
2. Write the equation of the horizontal line through $(-2, 5)$.
3. Write the equation of the horizontal line through $(0, -4)$.
4. Write the equation of the vertical line through $(6, 1)$.
5. Write the equation of the vertical line through $(-3, 7)$.
6. Write the equation of the vertical line through $(0, -2)$.
7. Is $y = 8$ horizontal or vertical?
8. Is $x = -5$ horizontal or vertical?
9. Which equation matches a horizontal line: $x = 2$ or $y = 2$?

10. Which equation matches a vertical line: $x = -7$ or $y = -7$?

11. Point $(9, -1)$ lies on a horizontal line. Write its equation.

12. Point $(-4, 6)$ lies on a vertical line. Write its equation.

13. Which line goes through $(3, 5)$ and $(8, 5)$? Write the equation.

14. Which line goes through $(-2, 1)$ and $(-2, 9)$? Write the equation.

Forming equations of horizontal and vertical lines — Proficient

Give each equation in simplest form.

1. Equation through $(-4, 2)$ and $(5, 2)$.
2. Equation through $(3, -6)$ and $(3, 4)$.
3. Horizontal line through $(7, -3)$.
4. Vertical line through $(-8, 1)$.
5. Equation for $(-1, 4)$, $(2, 4)$, $(9, 4)$.
6. Equation for $(5, -2)$, $(5, 0)$, $(5, 7)$.
7. Parallel to the x -axis through $(6, 9)$.
8. Parallel to the y -axis through $(-4, -5)$.

- 9.** Same line? $y = -2$ **10.** Same line? $x = 1$ **11.** Table $x = -2, 0, 5$, **12.** Points $(-6, 4), (-6,$
and points $(3, -2), (-7, -2)$ and points $(1, 8), (1, -3)$. $y = 7, 7, 7$. Equation? Equation?

Forming equations of horizontal and vertical lines — Excellence

Use the fixed coordinate and the gradient property.

1. Horizontal line through $(-9, 11)$. State its gradient.

2. Vertical line through $(4, -8)$. State its gradient property.

3. Which has gradient 0: $x = -3$ or $y = -3$?

4. Which has undefined gradient: $x = 6$ or $y = 6$?

5. Through $(2, 5)$ with gradient 0. Equation?

6. Through $(-7, 1)$ and vertical. Equation?

7. Through $(3, -4)$, parallel to $y = 10$. Equation?

8. Through $(8, 2)$, parallel to $x = -1$. Equation?

9. Points $A(6, -3)$, $B(-2, -3)$. Equation and gradient?

- 10.** Points $C(5, 7)$, $D(5, -4)$. Equation and gradient?
- 11.** Rectangle $(1, 2)$, $(7, 2)$, $(7, -3)$, $(1, -3)$. Equations of all sides?
- 12.** Moves horizontally through $(-4, 9)$. Fixed coordinate and equation?
- 13.** Moves vertically through $(12, -5)$. Fixed coordinate and equation?
- 14.** Do $x = 4$ and $y = 4$ have the same gradient?
- 15.** How do all horizontal-line equations differ from vertical-line equations?
- 16.** Compare the positions of $y = -6$ and $x = -6$.