

Gradients - Lesson 1

Lines and Gradients
(Calculator)

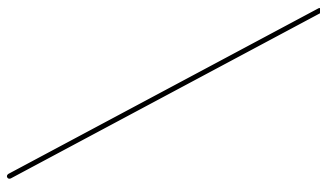
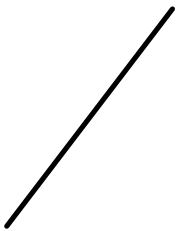
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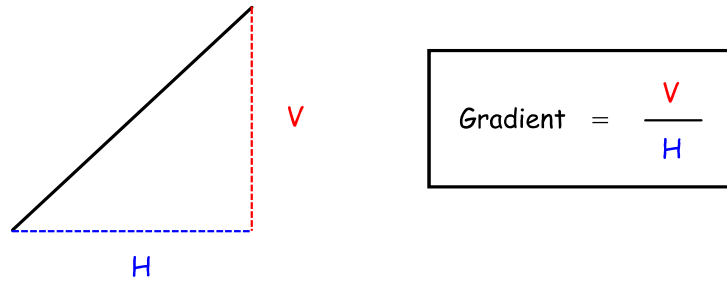
- Work out gradients of straight lines using a calculator.

SC

- \div numbers on a calculator.
- Rounding.

Gradients tell us how steep a line is.



Example 1

Calculate the gradient of a line that has a vertical height of 45 m and a horizontal distance of 37 m.

Answer to 2 d.p. .

$$\text{Gradient} = \frac{V}{H}$$

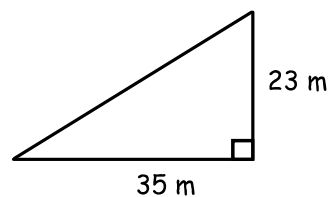
$$\text{Gradient} = 45 \div 37$$

$$\text{Gradient} = 1.216 \dots$$

$$\text{Gradient} = 1.22 \text{ (2 d.p.)}$$

Example 2

Calculate the gradient of this uphill slope (2 d.p.) :



$$\text{Gradient} = \frac{V}{H}$$

$$\text{Gradient} = 23 \div 35$$

$$\text{Gradient} = 0.657 \dots$$

$$\text{Gradient} = 0.66 \text{ (2 d.p.)}$$

Calculate the gradients of these lines (2 d. p. if necessary) :

1) $V = 46 \text{ cm}$, $H = 32 \text{ cm}$

2) $H = 16.4 \text{ cm}$, $V = 87.7 \text{ cm}$

3) $V = 12 \text{ cm}$, $H = 19 \text{ cm}$

4) $H = 11.1 \text{ cm}$, $V = 11.1 \text{ cm}$

5) $V = 76 \text{ cm}$, $H = 58.9 \text{ cm}$

6) $H = 33.3 \text{ cm}$, $V = 99 \text{ cm}$

7) $V = 666 \text{ cm}$, $H = 54.8 \text{ cm}$

8) $H = 2 \text{ thousand cm}$, $V = 15 \text{ 000 cm}$

Answers

- | | |
|---|-------|
| 1) $V = 46 \text{ cm}, H = 32 \text{ cm}$ | 1.44 |
| 2) $H = 16.4 \text{ cm}, V = 87.7 \text{ cm}$ | 5.35 |
| 3) $V = 12 \text{ cm}, H = 19 \text{ cm}$ | 0.63 |
| 4) $H = 11.1 \text{ cm}, V = 11.1 \text{ cm}$ | 1 |
| 5) $V = 76 \text{ cm}, H = 58.9 \text{ cm}$ | 1.29 |
| 6) $H = 33.3 \text{ cm}, V = 99 \text{ cm}$ | 2.97 |
| 7) $V = 666 \text{ cm}, H = 54.8 \text{ cm}$ | 12.15 |
| 8) $H = 2 \text{ thousand cm}, V = 15 \text{ 000 cm}$ | 7.5 |