



# Angles on a straight line

Mana Maths

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## Te reo Māori terms



**rārangi torotika**

straight line

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**tohu paetahi**

degree

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**tāhū**

line

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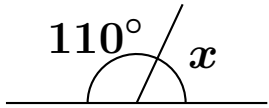
**koki roto**

interior angle

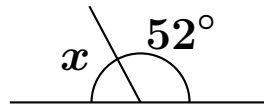
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# Angles on a straight line — Foundation

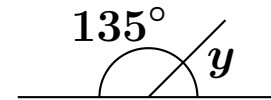
1. Find the missing angle.



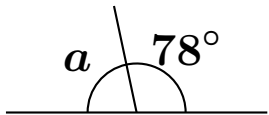
2. Find the missing angle.



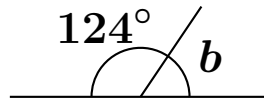
3. Find the missing angle.



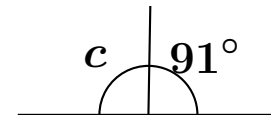
4. Find the missing angle.



5. Find the missing angle.



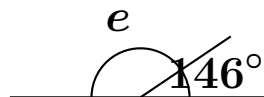
6. Find the missing angle.



7. Find the missing angle.



8. Find the missing angle.



9. Find the missing angle.



**10.** Are these angles on a straight line? Explain.

$95^\circ$  and  $85^\circ$

**11.** Are these angles on a straight line? Explain.

$120^\circ$  and  $70^\circ$

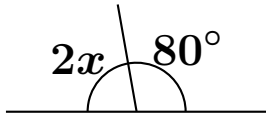
**12.** One angle is  $73^\circ$ . What is the angle next to it on the same straight line?

**13.** One angle is  $149^\circ$ . What is the angle next to it on the same straight line?

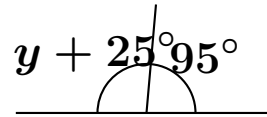
**14.** Complete the rule: angles on a straight line add to \_\_\_\_\_.

# Angles on a straight line — Proficient

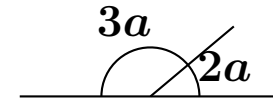
1. Find  $x$ .



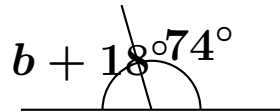
2. Find  $y$ .



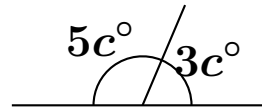
3. Find  $a$ .



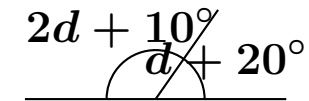
4. Find  $b$ .



5. Find  $c$ .



6. Find  $d$ .



7. The angle next to  $4x^\circ$  on a straight line is  $(x + 30)^\circ$ . Find  $x$ .

8. The angle next to  $(2m + 10)^\circ$  on a straight line is  $(m + 50)^\circ$ . Find  $m$ .

9. Two adjacent angles on a straight line are equal. What is each angle?

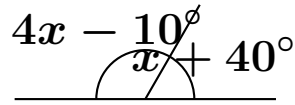
**10.** One angle on a straight line is three times the other. Find both angles.

**11.** One angle on a straight line is  $26^\circ$  bigger than the other. Find both angles.

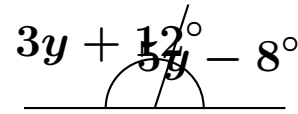
**12.** Explain how you know that  $112^\circ$  and  $68^\circ$  could be adjacent angles on a straight line.

# Angles on a straight line — Excellence

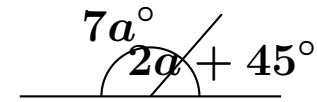
1. Find  $x$ .



2. Find  $y$ .



3. Find  $a$ .



4. A student says  $118^\circ$  and  $72^\circ$  are angles on a straight line because both are obtuse. Explain why this is wrong.

5. Two adjacent angles on a straight line are in the ratio  $2 : 7$ . Find both angles.

6. Two adjacent angles on a straight line are in the ratio  $4 : 5$ . Find both angles.

7. One angle is  $14^\circ$  less than twice the other. Find both angles.

8. One angle is  $38^\circ$  more than half the other. Find both angles.

9. Three angles lie along a straight line. Two are  $35^\circ$  and  $68^\circ$ . Find the third angle.

- 10.** Three angles lie along a straight line. They are  $x^\circ$ ,  $2x^\circ$  and  $3x^\circ$ . Find  $x$ .
- 11.** Three angles lie along a straight line. They are  $(x + 10)^\circ$ ,  $(x + 20)^\circ$  and  $50^\circ$ . Find  $x$ .
- 12.** A straight line is split into four adjacent angles:  $25^\circ$ ,  $y^\circ$ ,  $40^\circ$  and  $2y^\circ$ . Find  $y$ .
- 13.** A straight line is split into four adjacent angles:  $a^\circ$ ,  $(a + 15)^\circ$ ,  $2a^\circ$  and  $30^\circ$ . Find  $a$ .
- 14.** Can two acute angles make a straight line? Explain your answer.
- 15.** Can an obtuse angle and a reflex angle lie adjacent on one straight line? Explain your answer.
- 16.** Write your own pair of adjacent angles on a straight line where one angle is algebraic and the other is numeric. Then solve it.