Guide to:
Angles in parallel lines

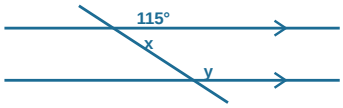
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Explanation:

When a straight line (transversal) crosses a pair of parallel lines, three angle rules are formed. In exam questions that say *"Give reasons for your answer"*, you must use the exact mathematical names (never write "Z-angles", "F-angles", or "C-angles"):

• **Alternate angles are equal** (Z-shape) • **Corresponding angles are equal** (F-shape) • **Co-interior (allied) angles add up to 180°** (C-shape). Also remember: **vertically opposite angles are equal**.

Example 1: Find angles *x* and *y*, giving a reason for each.



***x* = 65°** (angles on a straight line add up to 180°)
***y* = 65°** (**alternate angles** are equal)

Example 2: Two co-interior angles between parallel lines are **(3*x* + 10)°** and **(2*x* − 5)°**. Find the value of *x*.

Solution:

Co-interior angles add up to 180°:
(3*x* + 10) + (2*x* − 5) = 180 → **5*x* + 5 = 180**
5*x* = 175 → *x* = 175 ÷ 5 = 35
Answer: *x* = 35

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ken@mathslinks.co.uk