

## Lesson 1.2.5: Unknown Angle Proofs (part 2)

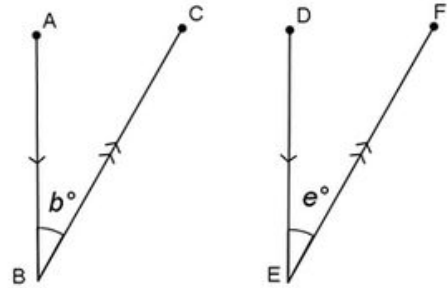
### Targets:

- I can write proofs for unknown angles involving auxiliary lines.

### Warm Up

#### Opening Exercise

In the figure on the right,  $\overline{AB} \parallel \overline{DE}$  and  $\overline{BC} \parallel \overline{EF}$ . Prove that  $b = e$   
 (Hint: Extend  $\overline{BC}$  and  $\overline{ED}$ .)



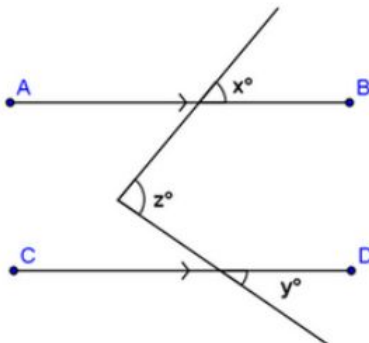
Statement	Reason

### What is an Auxiliary Line

Read parts 5, 6, and 7 on my website about an Auxiliary Line. There are two different examples given for how you could use an auxiliary line for this proof. Show both ways below.

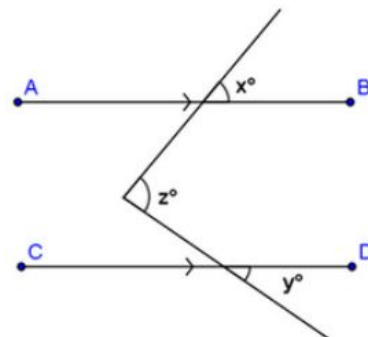
#### Option 1

Given:  $\overline{AB} \parallel \overline{CD}$ .  
 Prove:  $z = x + y$ .

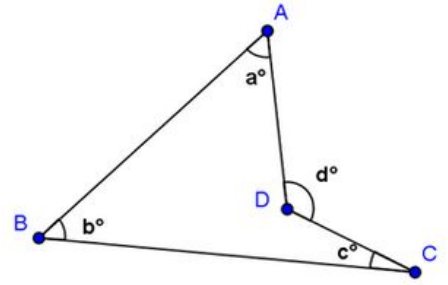


#### Option 2

Given:  $\overline{AB} \parallel \overline{CD}$ .  
 Prove:  $z = x + y$ .

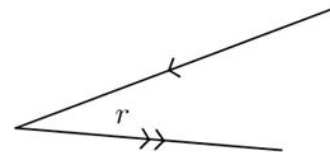
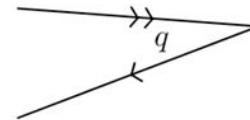
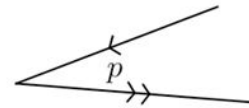


**Example 2** In the figure, prove that  $d = a + b + c$ .



Statement	Reason

**Exit Ticket** Prove  $m\angle p = m\angle r$ .



Statement	Reason