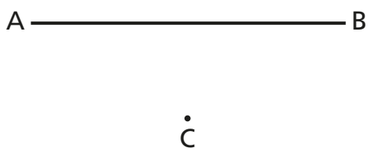
Investigate angles between parallel lines and the transversal

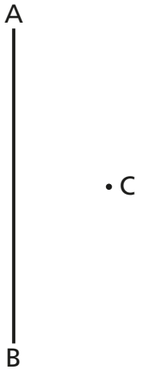
1 For each diagram, draw a line segment that is parallel to AB and goes through point C.

Draw on the diagrams to indicate that the lines are parallel.

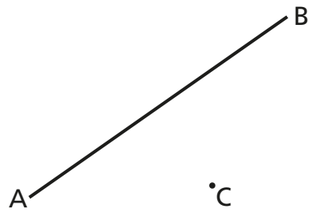
a)



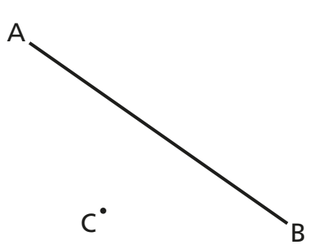
b)



c)

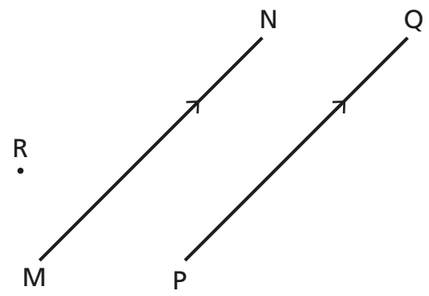


d)



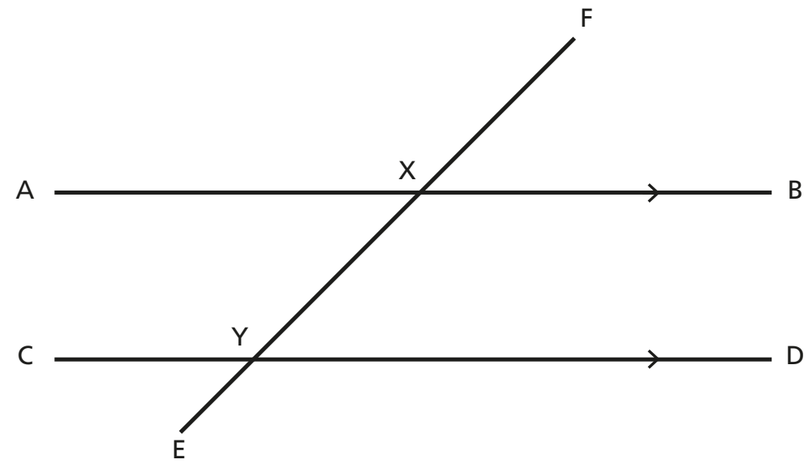
2 Line segments MN and PQ are parallel.

Draw a transversal that cuts through the parallel lines and goes through point R.



3 Line segments AB and CD are parallel.

Line segment EF is a transversal that intersects the line segments at points X and Y respectively.



a) Measure the size of each angle.

∠AXF =		∠BXF =	
∠AXE =		∠BXE =	
∠CYF =		∠DYF =	
∠CYE =		∠DYE =	

Compare answers with a partner.

What do you notice?

b) Complete the sentences.

Angle AXE is alternate to angle _____

Angle AXE is corresponding to angle _____

Angle BXF is corresponding to angle _____

Angle CYF is alternate to angle _____

4 Line segments QR and ST are parallel.

Line segment UV is a transversal that intersects the line segments at points X and Y respectively.

a) Draw a diagram to represent this.

Compare your diagram with a partner's diagram.

Do they look the same? Does it matter? Why?

b) Eight angles are formed. Measure the size of each angle and label them on the diagram.

Compare answers with a partner.

What is the same and what is different?

c) Identify two pairs of alternate angles and two pairs of corresponding angles.

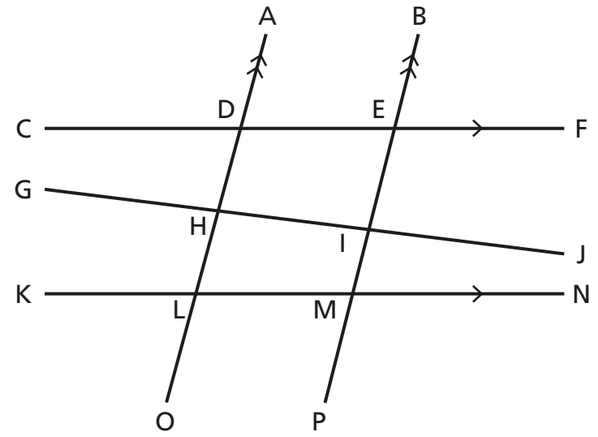
_____

_____

_____

What do you notice?

5



a) Complete the sentence in two ways.

Line segments _____ and _____ are parallel.

Line segments _____ and _____ are parallel.

b) Complete the sentence.

GJ is a _____ that intersects the line segments

_____ and _____

c) Identify four pairs of alternate angles.

_____

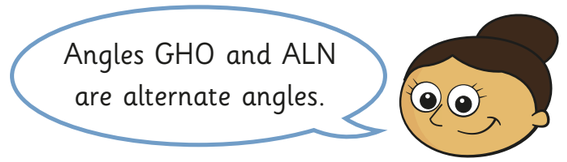
_____

d) Identify four pairs of corresponding angles.

_____

_____

e)



Do you agree with Dora? _____

Explain your answer.