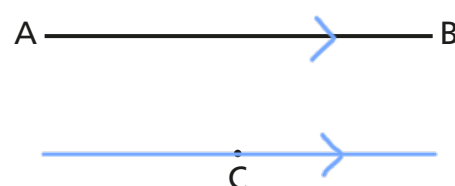


Investigate angles between parallel lines and the transversal

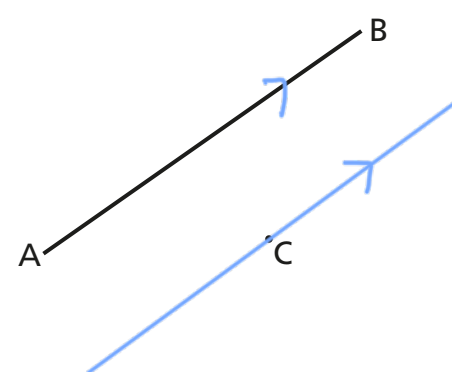
- 1 For each diagram, draw a line segment that is parallel to AB and goes through point C.

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

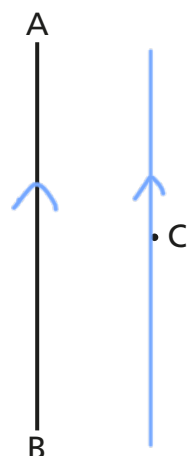
a)



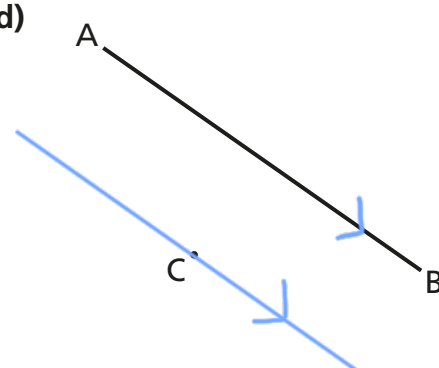
c)



b)



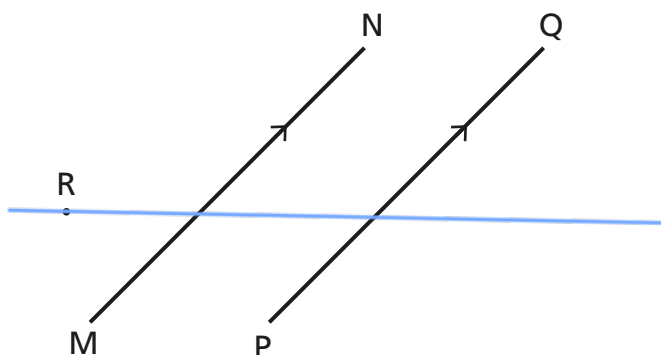
d)



- 2 Line segments MN and PQ are parallel.

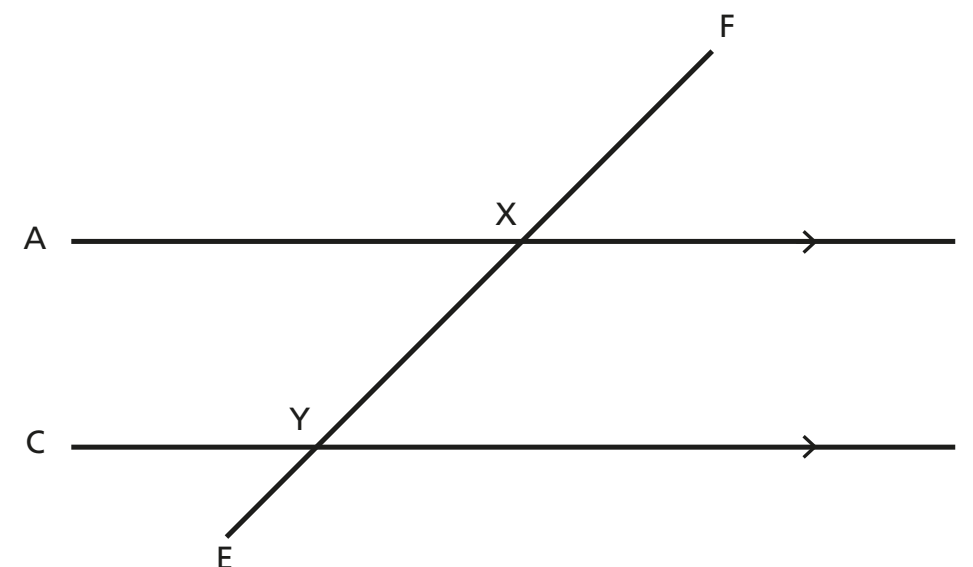
Draw a transversal that cuts through the parallel lines and goes through point R.

e.g.



- 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.

$\angle AXF = 135^\circ$

$\angle BXF = 45^\circ$

$\angle AXE = 45^\circ$

$\angle BXE = 135^\circ$

$\angle CYF = 135^\circ$

$\angle DYF = 45^\circ$

$\angle CYE = 45^\circ$

$\angle DYE = 135^\circ$

Compare answers with a partner.

What do you notice?

- b) Complete the sentences.

Angle AXE is alternate to angle DYF

Angle AXE is corresponding to angle CYE

Angle BXF is corresponding to angle DYF

Angle CYF is alternate to angle BXE

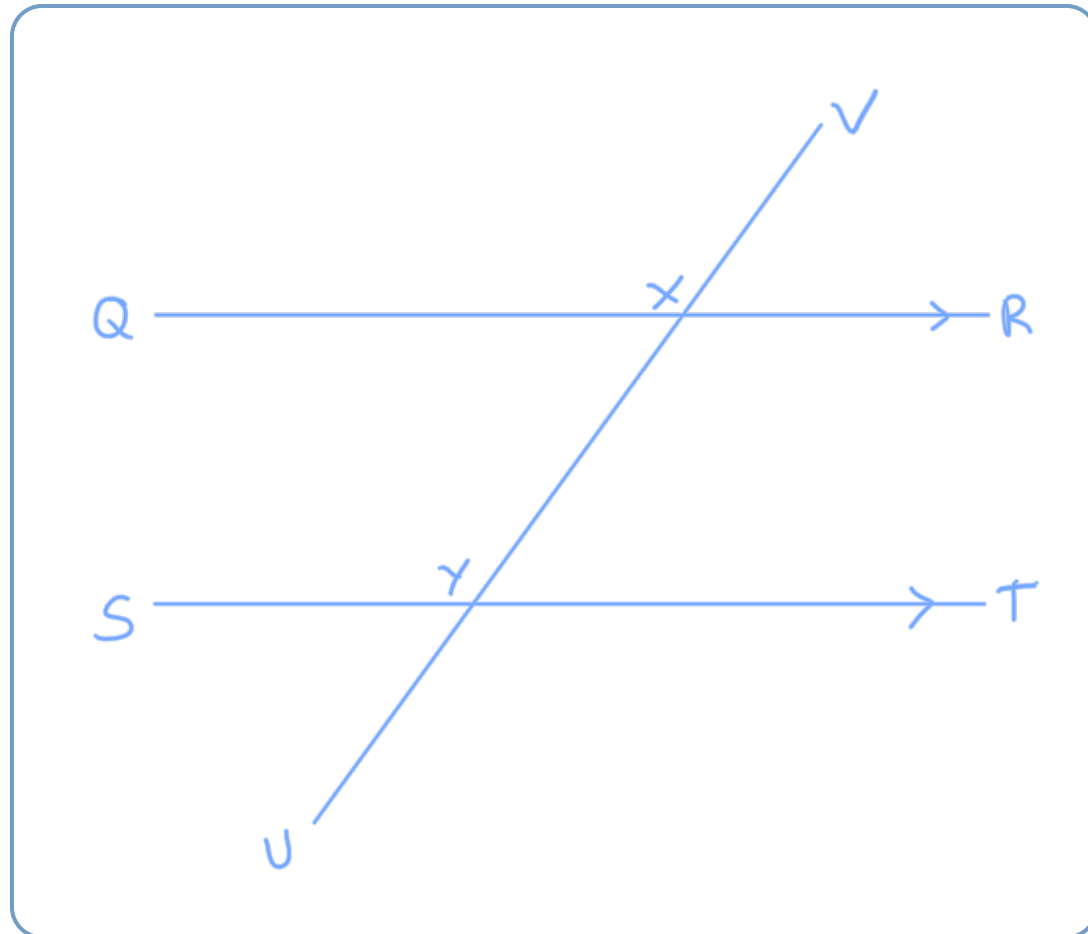


4

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?

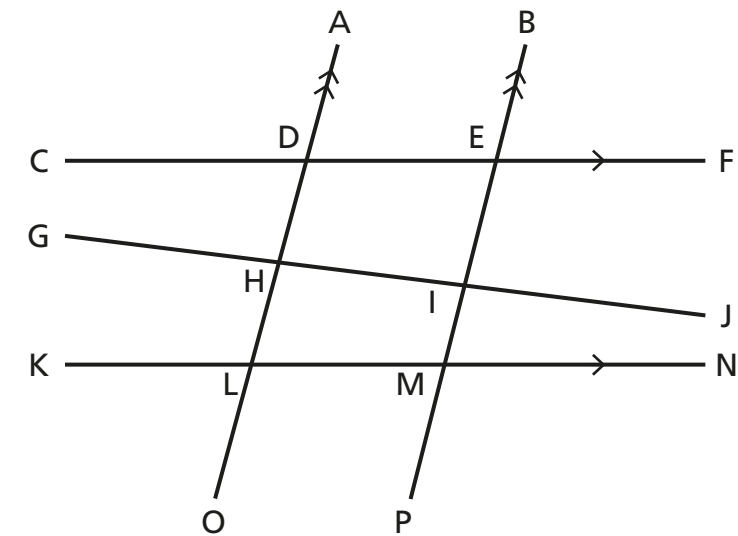
c) Identify two pairs of alternate angles and two pairs of corresponding angles. e.g.

Alternate: $\angle QXY$ & $\angle TYX$ $\angle SYX$ & $\angle YXR$

Corresponding: $\angle QXY$ & $\angle SYU$ $\angle SYX$ & $\angle QXV$

What do you notice?

5



a) Complete the sentence in two ways.

Line segments CF and KN are parallel.

Line segments OA and PB are parallel.

b) Complete the sentence.

GJ is a transversal that intersects the line segments OA and PB

c) Identify four pairs of alternate angles.

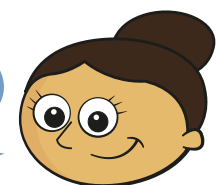
$\angle CDL$ & $\angle DLM$ $\angle ADE$ & $\angle DEM$
 $\angle DEM$ & $\angle EMN$ $\angle LMP$ & $\angle DLM$

d) Identify four pairs of corresponding angles.

$\angle CDO$ & $\angle KLO$ $\angle ADE$ & $\angle ALN$
 $\angle PEF$ & $\angle ODE$ $\angle KLA$ & $\angle KMB$

e)

Angles GHO and ALN are alternate angles.



Do you agree with Dora? NO

Explain your answer.