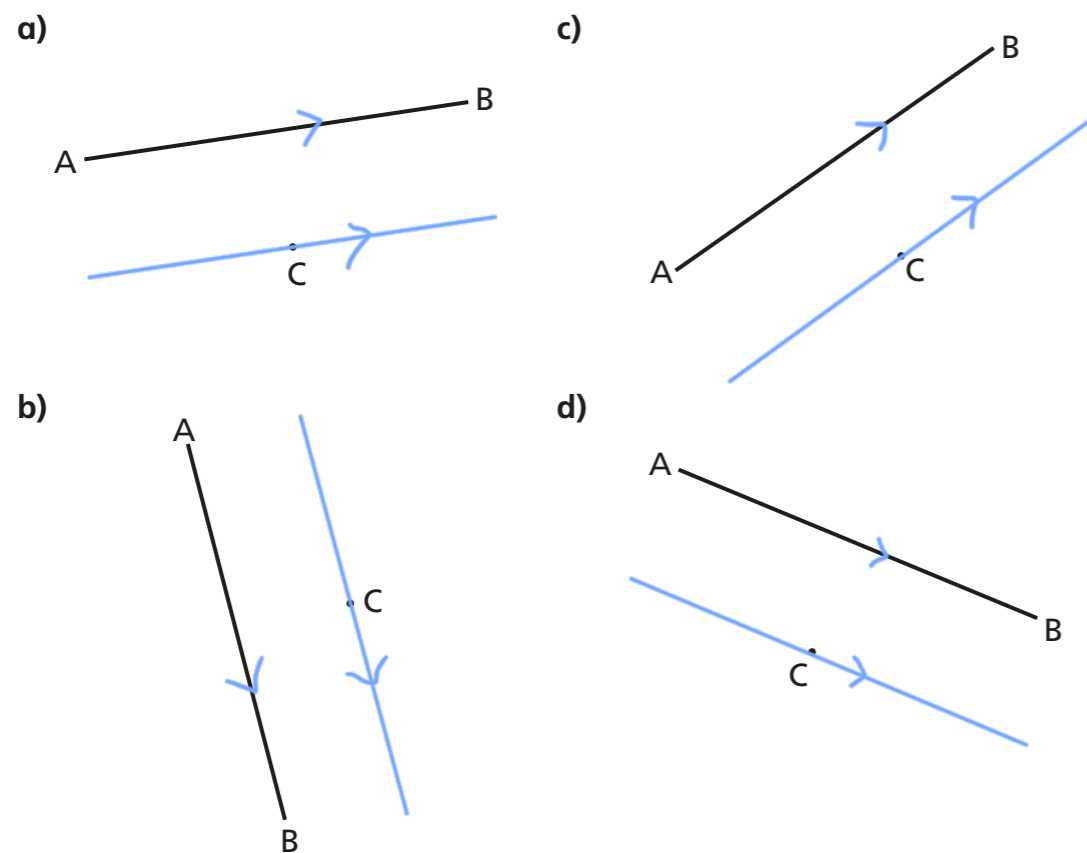


# Investigate angles in parallel lines

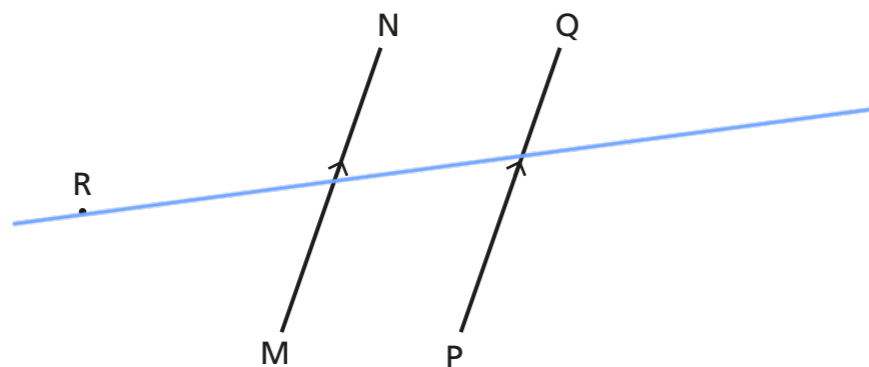
H

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

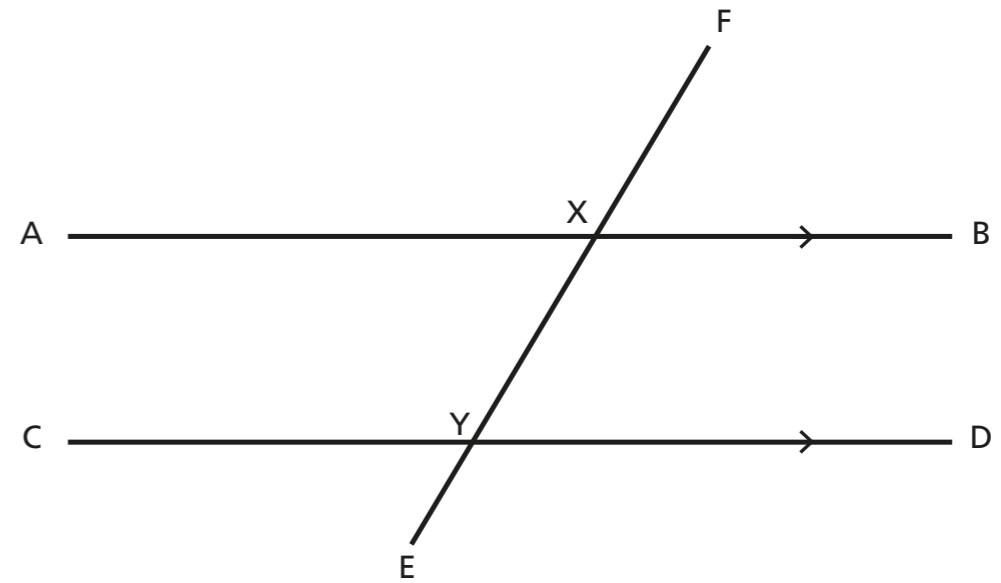
Draw on the diagrams to indicate that the lines are parallel.



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.

|                |                                   |                |                                   |
|----------------|-----------------------------------|----------------|-----------------------------------|
| $\angle AXF =$ | <input type="text" value="120°"/> | $\angle BXF =$ | <input type="text" value="60°"/>  |
| $\angle AXE =$ | <input type="text" value="60°"/>  | $\angle BXE =$ | <input type="text" value="120°"/> |
| $\angle CYF =$ | <input type="text" value="120°"/> | $\angle DYF =$ | <input type="text" value="60°"/>  |
| $\angle CYE =$ | <input type="text" value="60°"/>  | $\angle DYE =$ | <input type="text" value="120°"/> |

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

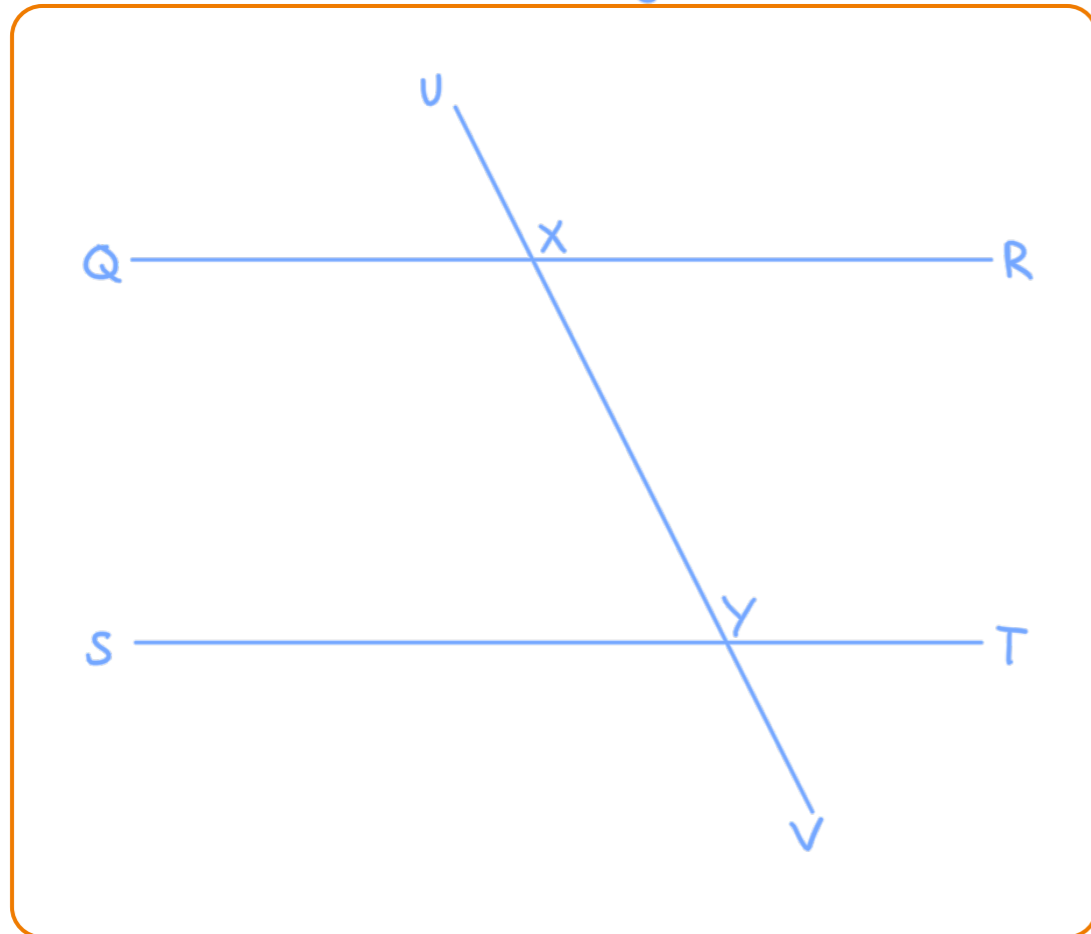


4

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. e.g.



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.

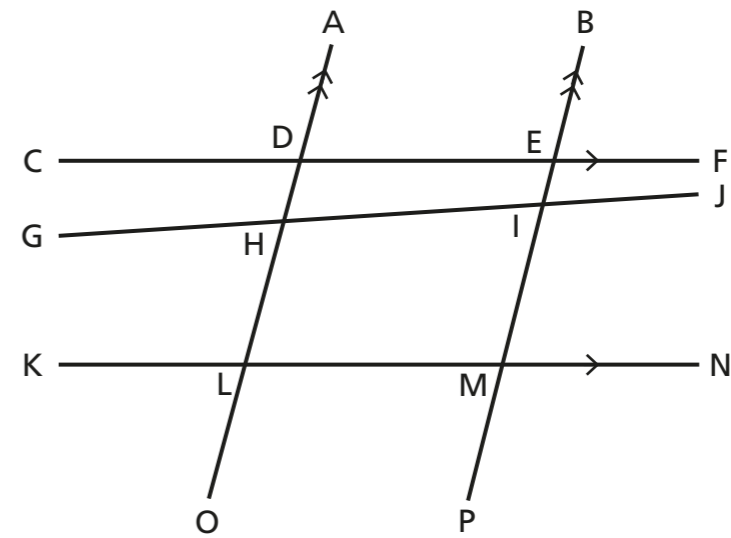
Alternate:  $\angle QXV$  &  $\angle UYT$      $\angle RXV$  &  $\angle SYU$

Corresponding:  $\angle QXV$  &  $\angle SYU$      $\angle RXV$  &  $\angle TYU$

What do you notice?



5



a) Complete the sentence in two ways.

Line segments OA and PB are parallel.

Line segments CF and KN 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.

$\angle CDO$  &  $\angle ALN$      $\angle FEP$  &  $\angle KMB$

$\angle ADE$  &  $\angle CEP$      $\angle BML$  &  $\angle NLO$

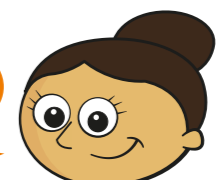
d) Identify four pairs of corresponding angles.

$\angle CDO$  &  $\angle KLO$      $\angle CEP$  &  $\angle KMP$

$\angle ADF$  &  $\angle BEF$      $\angle BMK$  &  $\angle ALK$

e)

Angles GHO and ALN are alternate angles.



Do you agree with Dora? NO

Explain your answer.

