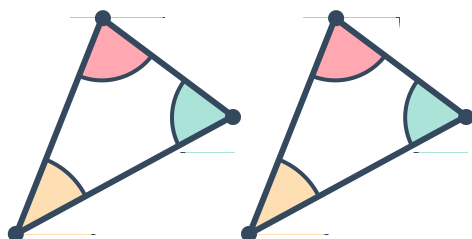


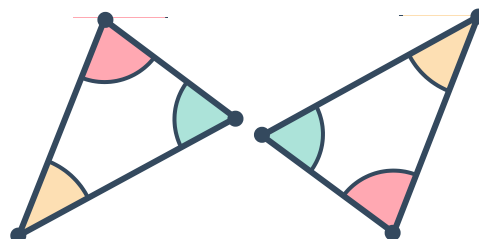
Rigid transformations

- 1 State whether the following pairs of triangles are a translation, rotation or reflection of one another:

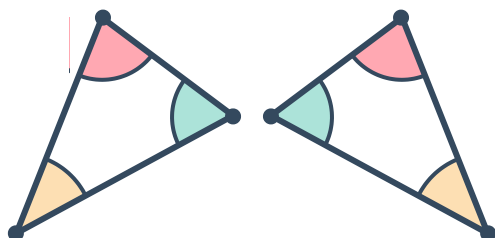
a



b

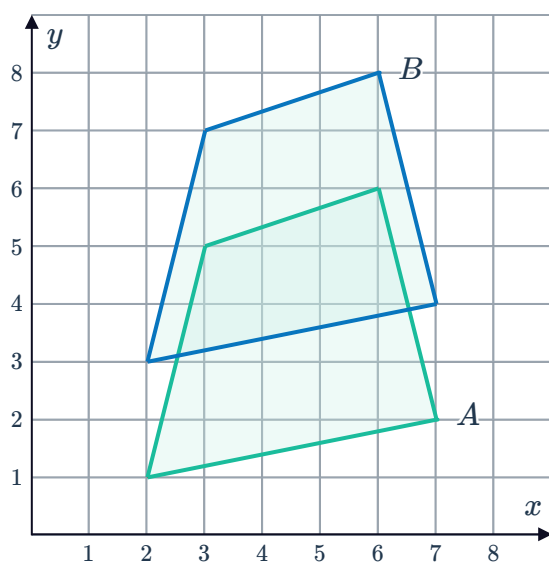


c

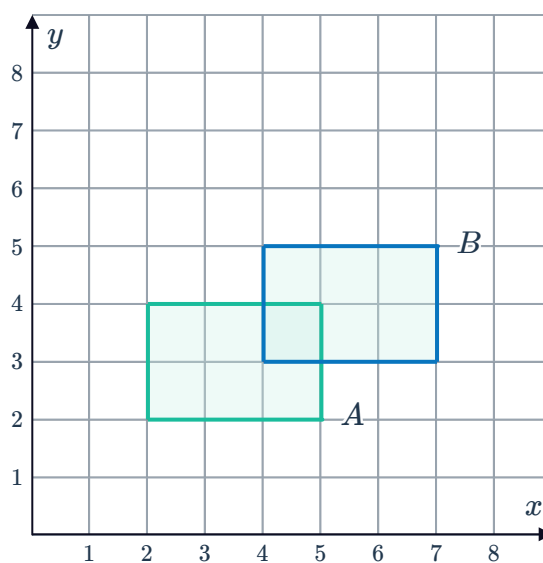


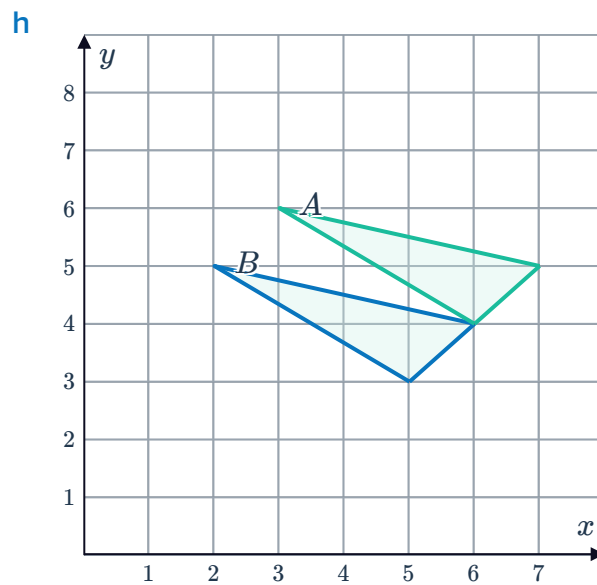
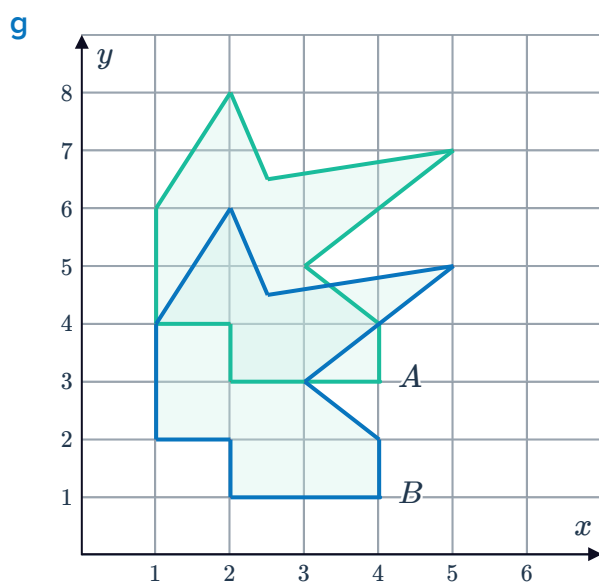
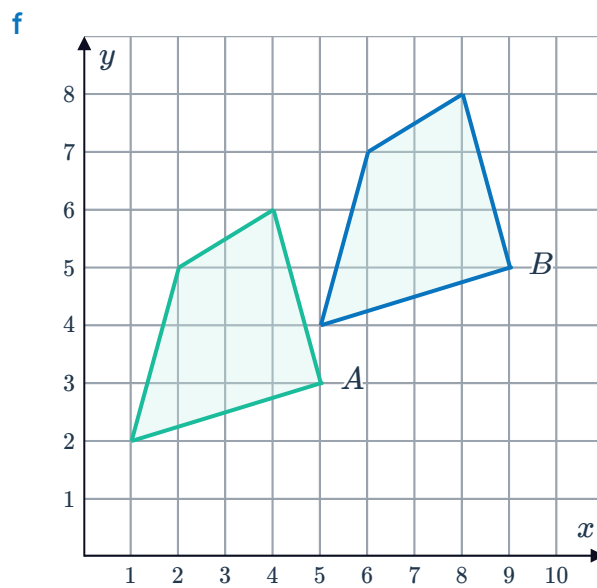
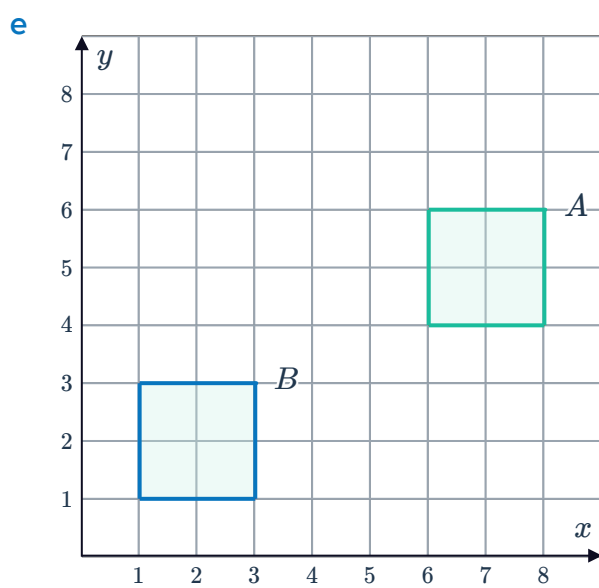
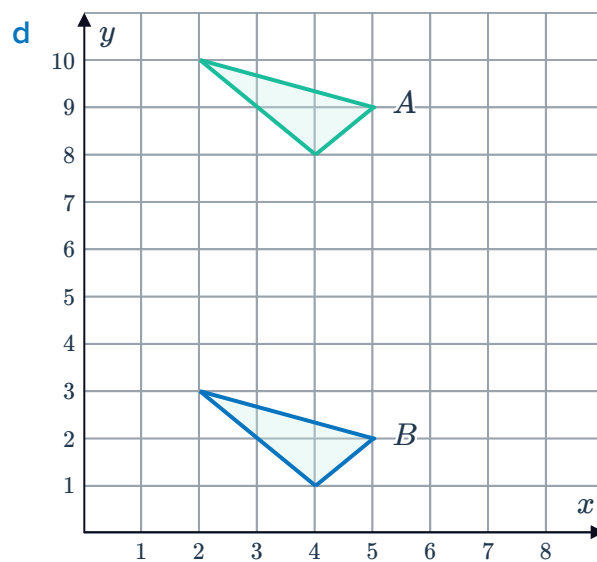
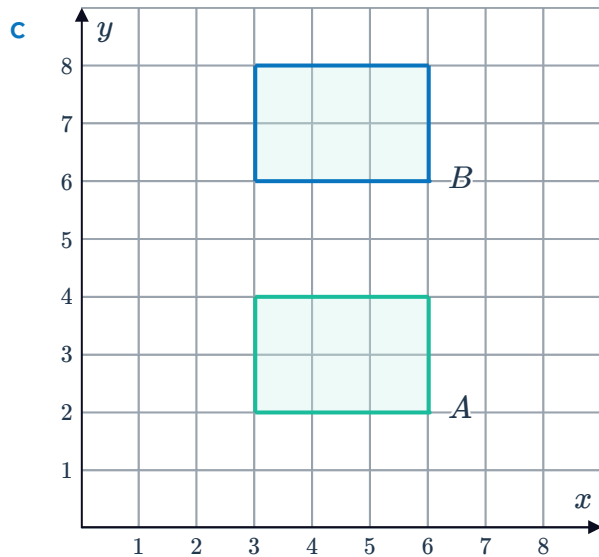
- 2 For each of the following, describe the translation from figure *A* to figure *B*:

a



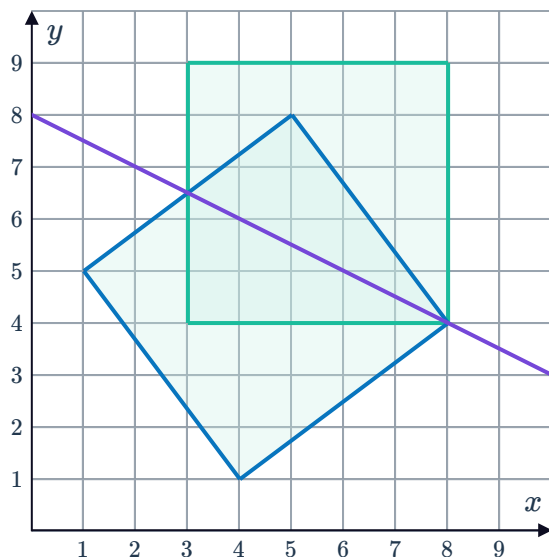
b



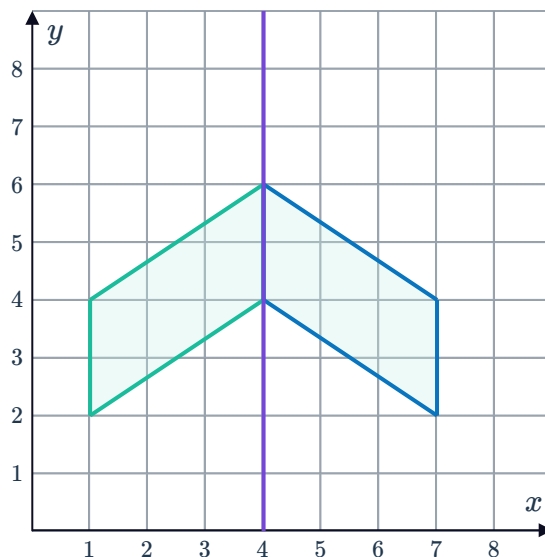


3 Determine whether the following diagrams show a reflection across the given line:

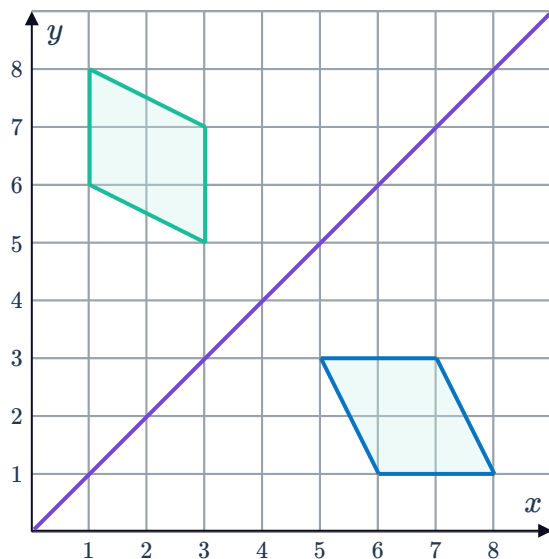
a



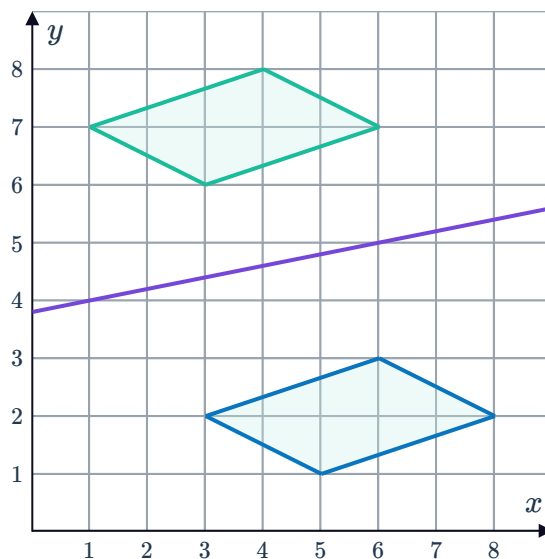
b



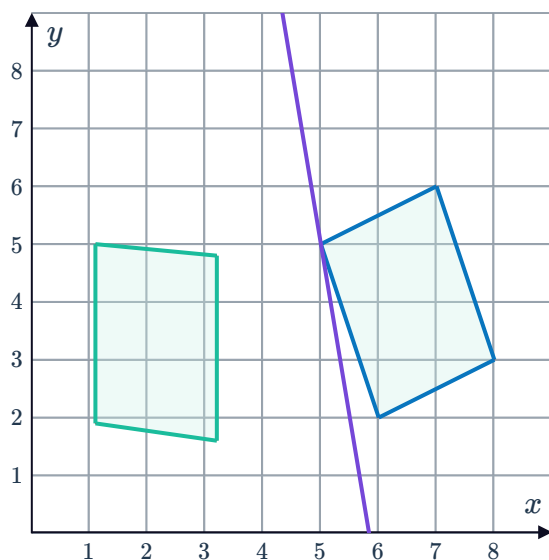
c



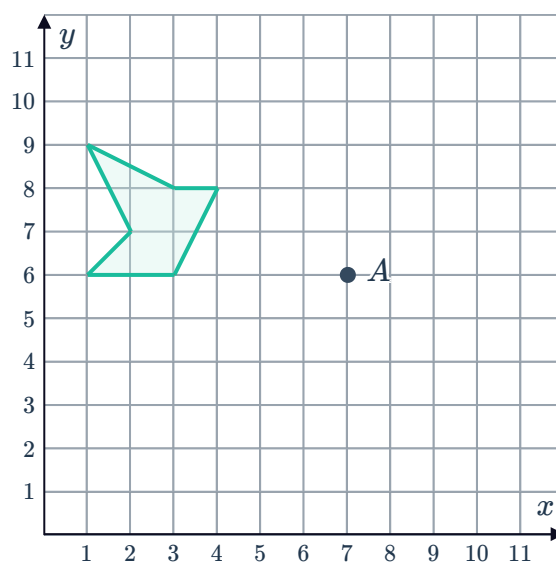
d



e



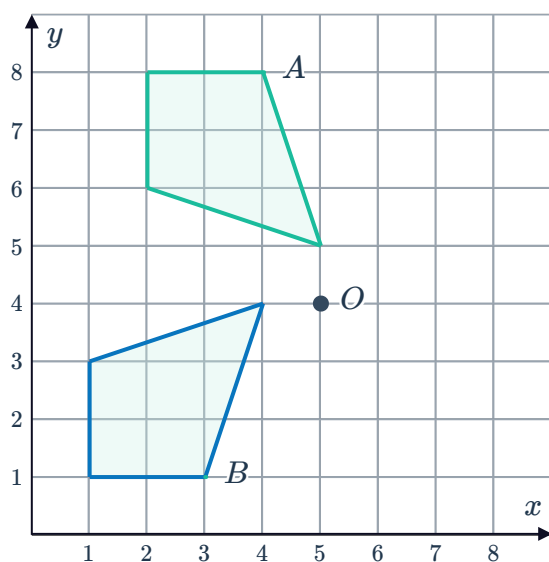
- 4 Consider the following shape:
Draw the shape after it has been rotated by 180° clockwise about point A .



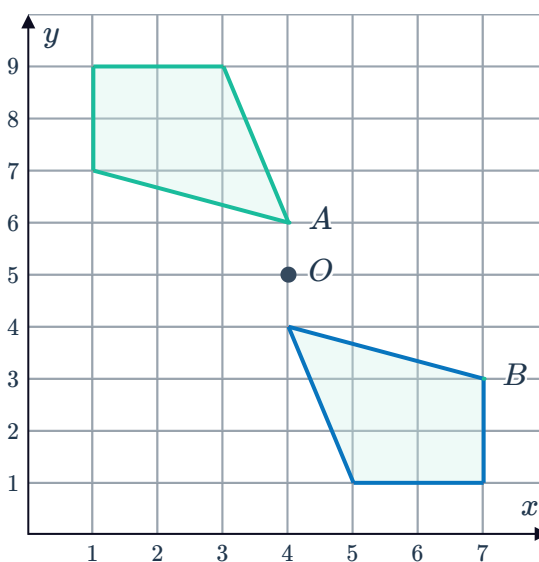
- 5 For each of the following:

- Find the clockwise angle of rotation of shape A to shape B about point O .
- Find the anticlockwise angle of rotation of shape A to shape B about point O .

a

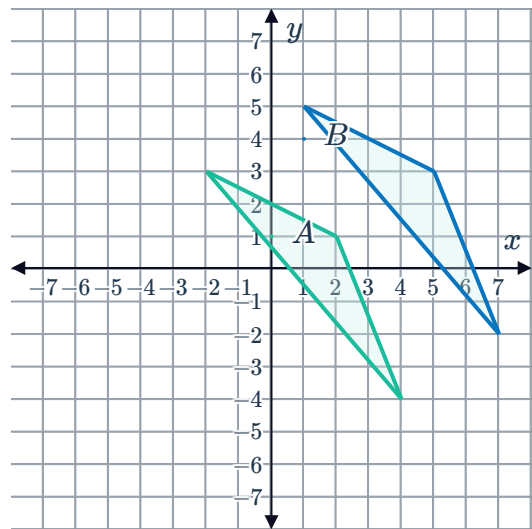


b



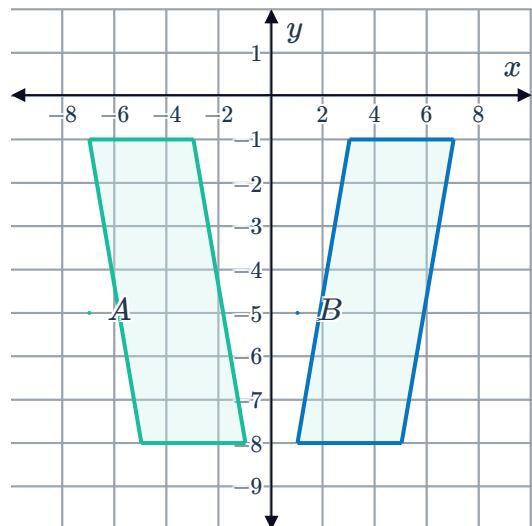
6 Consider the figures shown:

- a What type of transformation can take triangle A to triangle B ?
- b Identify the transformation from triangle A to triangle B .



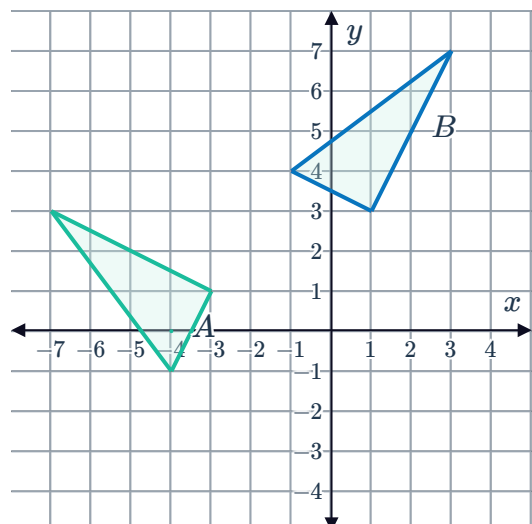
7 Consider the figures shown:

- a What type of transformation can transform quadrilateral A to quadrilateral B ?
- b Identify the transformation from quadrilateral A to quadrilateral B .

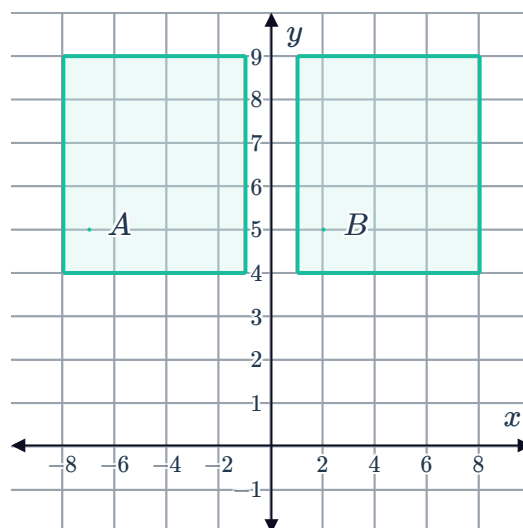


8 Consider the figures shown:

- a What type of transformation can transform triangle A to triangle B ?
- b Identify the transformation from triangle A to triangle B .

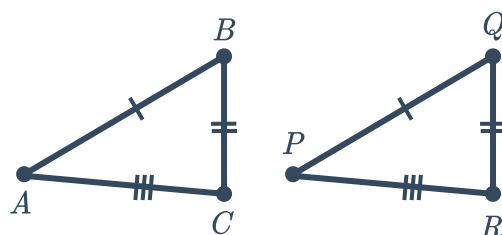


- 9 Consider the figures shown.
What are the possible types of transformations that could get rectangle A to rectangle B?

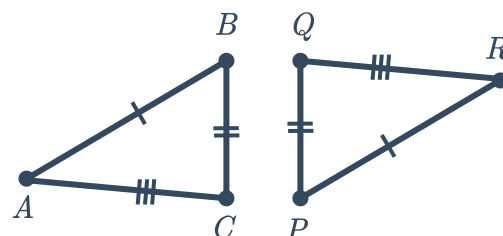


Congruence

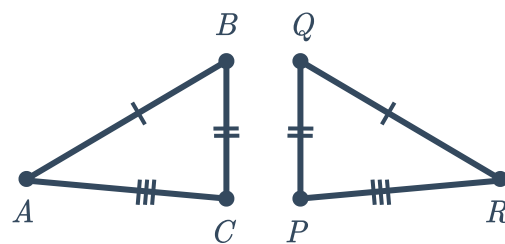
- 10 The given diagram shows 2 triangles that are translations of one another:
State the angle that has the same size as $\angle CBA$.



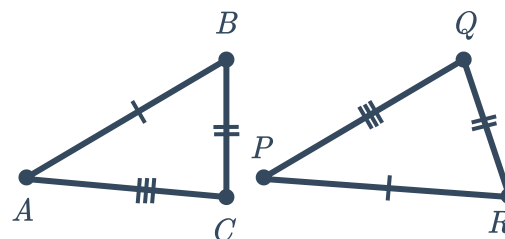
- 11 The given diagram shows 2 triangles that are rotations of one another:
State the angle that has the same size as $\angle PRQ$.



- 12 The given diagram shows 2 triangles that are reflections of one another:
State the angle that has the same size as $\angle RPQ$.



- 13 The given diagram shows 2 triangles that are translations and reflections of one another:
State the angle that has the same size as $\angle CBA$.

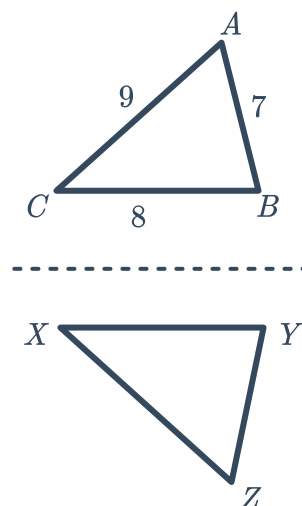


- 14 $\triangle ABC$ is reflected along the dotted line and its image $\triangle XYZ$ is produced.

a Find the length of each side:

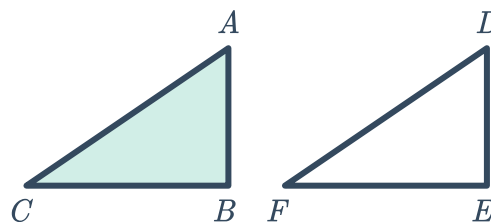
- i XY ii YZ
iii XZ

b Describe the relationship between $\triangle XYZ$ and $\triangle ABC$.

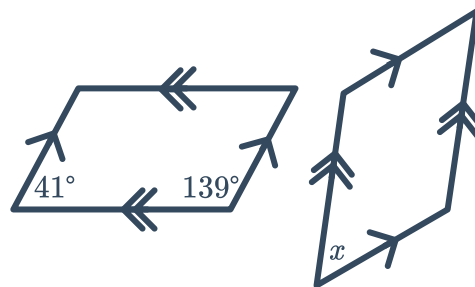


15 $\triangle ABC$ is translated to the right to form $\triangle DEF$:

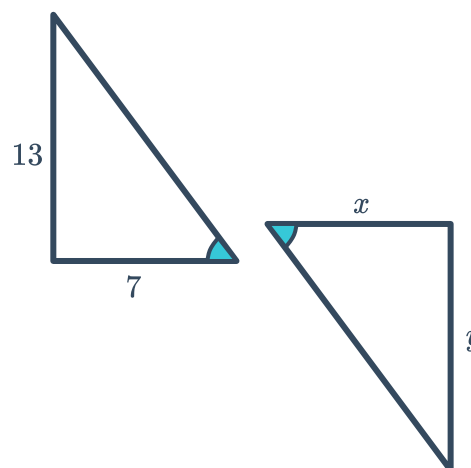
- a State which side of $\triangle DEF$ corresponds to BC .
- b State which angle of $\triangle DEF$ corresponds to $\angle BCA$.
- c If $AC = 14$ cm, find the length of DF .
- d If the smallest angle in $\triangle DEF$ is $\angle EFD$, state the smallest angle in $\triangle ABC$.



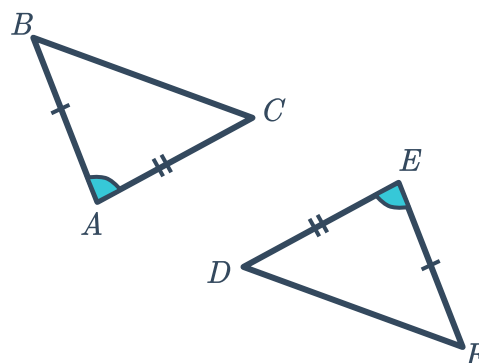
16 Given that the following shapes are congruent, find the value of x .



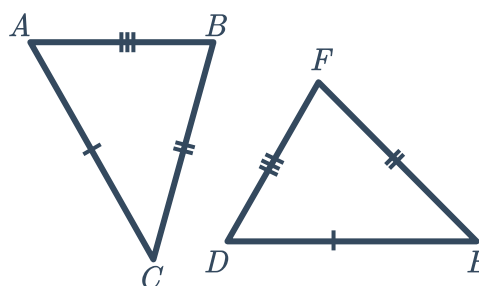
17 Given that the following triangles are congruent, find the values of x and y .



- 18 Given that $\triangle BAC \equiv \triangle FED$, which angle of $\triangle FED$ corresponds to $\angle ABC$?



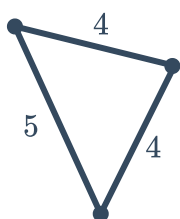
- 19 Which side is equal to AB in $\triangle DFE$?



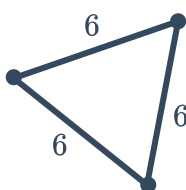
Bisectors

- 20 State whether the following triangles have a line of symmetry:

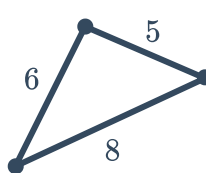
a



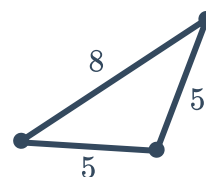
b



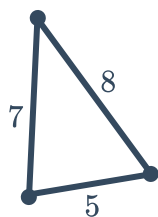
c



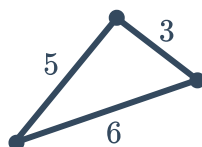
d



e

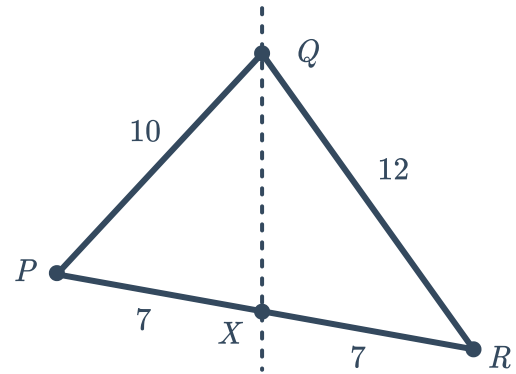


f



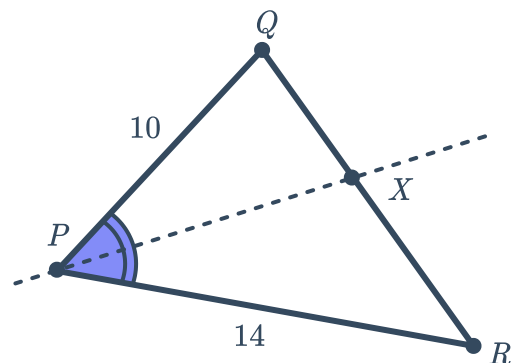
21 Consider $\triangle PQR$ with midpoint X at side PR :

- State what type of triangle is $\triangle PQR$.
- State whether the following is correct.
 - $\angle QXR > \angle QXP$
 - $\angle QXR = \angle QXP$
 - $\angle QXR < \angle QXP$
- Is the line through Q and X a line of symmetry for $\triangle PQR$?
- Are $\angle RQX$ and $\angle PQX$ equal or not equal?



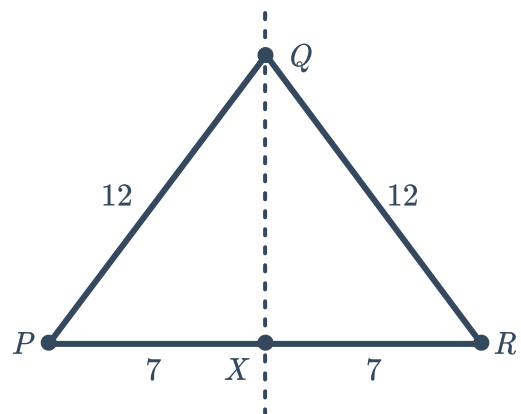
22 Consider $\triangle PQR$ with angle bisector PX of $\angle QPR$ and $QR = 12$:

- State what type of triangle is $\triangle PQR$.
- State whether the following is correct.
 - $QX > RX$
 - $QX = RX$
 - $QX < RX$
- Is the line through P and X a line of symmetry for $\triangle PQR$?
- Are $\angle PXR$ and $\angle PXQ$ equal or not equal?



23 Consider the $\triangle PQR$ with midpoint X at side PR :

- State what type of triangle is $\triangle PQR$.
- Determine whether the following is correct.
 - $\angle QXR > \angle QXP$
 - $\angle QXR = \angle QXP$
 - $\angle QXR < \angle QXP$
- Is the line through Q and X a line of symmetry for $\triangle PQR$?
- Are $\angle RQX$ and $\angle PQX$ equal or not equal?



24 Consider $\triangle PQR$ with angle bisector QX at $\angle PQR$:

- a** State what type of triangle is $\triangle PQR$.
- b** Determine whether the following is correct.
 - i** $PX > RX$
 - ii** $PX = RX$
 - iii** $PX < RX$
- c** Is the line through Q and X a line of symmetry for $\triangle PQR$?
- d** Are $\angle QXR$ and $\angle QXP$ equal or not equal?

