

Step-by-Step 1**Lesson 8.1, Question 6**

You will need copies of Master 8.15, *Diagram for Lesson 8.1 Practice, Question 6*.

Step 1 Look at the diagram.

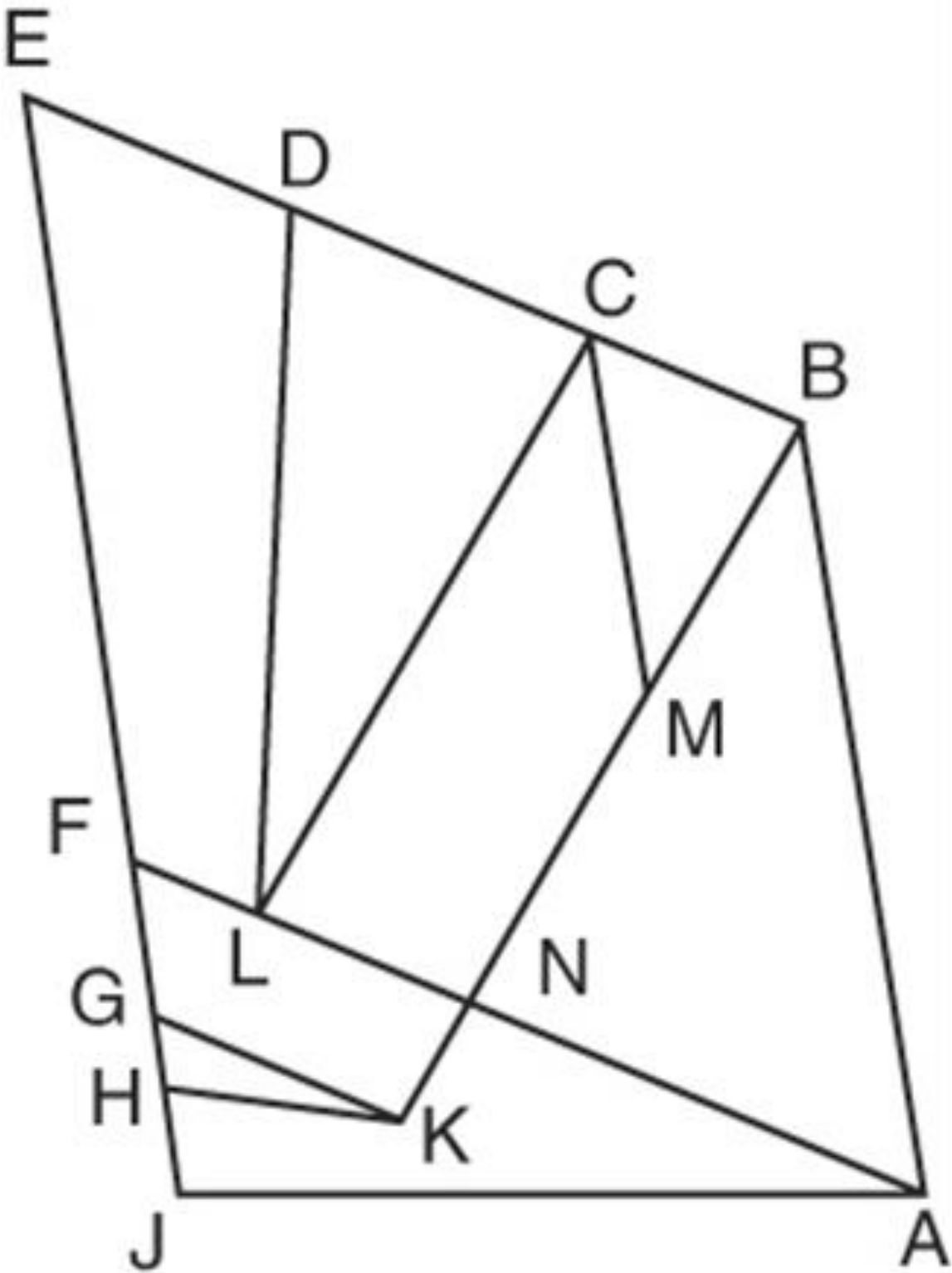
Mark with an arrowhead line segment EJ and all the line segments parallel to EJ.

Step 2 Mark with a double arrowhead line segment CL and all the line segments parallel to CL.

Step 3 Mark with a triple arrowhead line segment EB and all the line segments parallel to EB.

Step 4 List all the pairs of parallel line segments you found in *Steps 1 to 3*.

Step 5 Look at the line segments left unmarked.
Can you find any more parallel line segments?
Why or why not?



Step-by-Step 2**Lesson 8.2, Question 5**

You will need copies of Master 8.16, *Diagram for Lesson 8.2, Question 5*.

Step 1 Consider trapezoid EDCA.

Identify pairs of adjacent sides that are perpendicular.

Step 2 Consider square LBAK.

Identify pairs of adjacent sides that are perpendicular.

Step 3 Consider rectangle HRLK.

Identify pairs of adjacent sides that are perpendicular.

Step 4 Identify any other triangles and quadrilaterals in the diagram.

Find pairs of adjacent sides that are perpendicular.

Step 5 How do you know that the segments you found in *Steps 1 to 4* are perpendicular?

Master 8.10

Step-by-Step 3

Lesson 8.3, Question 6

Step 1 Sketch and label rhombus RTSU.

What do you know about diagonals RS and TU?

To draw the rhombus RTSU, you will need a ruler, a compass, and plain paper.

Step 2 Draw line segment RS of length 7 cm.
Set the compass so the distance between the compass and pencil points is 5 cm.
Place the compass point on R.
Draw a circle.

Step 3 Do not change the distance between the compass and pencil points.
Place the compass point on S.
Draw a circle that intersects the first one you drew.
Label the points T and U where the circles intersect.
Join the points to form RTSU.

Step 4 How can you check you have drawn a rhombus?

Lesson 8.4, Question 7

You will need copies of $\triangle RST$, a ruler and compass, and plain paper.

Step 1 Bisect $\angle R$.

Step 2 Draw the perpendicular bisector of ST .

Step 3 What do you notice about the bisectors? _____

Will the result be true for all isosceles triangles? Explain.

Step 4 Draw a line segment.
Label it AB .
Set the compass so the distance between the compass
and pencil points is equal to AB .

Place the compass point on A .
Draw an arc above AB .

Place the compass point on B .
Draw an arc to intersect the first arc.

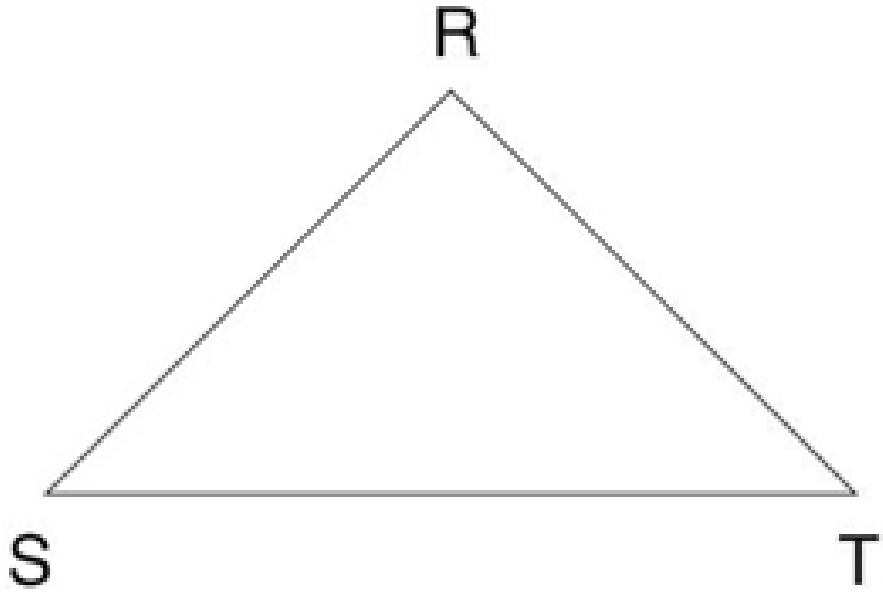
Label point C where the arcs intersect.
Join AC and BC to form equilateral $\triangle ABC$.

Step 5 Repeat *Steps 1* and *2*.
What do you notice about the bisectors?
Will the result be true for all equilateral triangles? Explain.

Step 6 Draw a large scalene $\triangle RST$.

Repeat *Steps 1* and *2*.
What do you notice about the bisectors?

Will the result be true for all scalene triangles? Explain.



Lesson 8.5, Question 10

You will need copies of a coordinate grid (Master 8.20).

Step 1 Write the formula for the area of a parallelogram:

$$A = \underline{\quad} \times \underline{\quad}$$

Step 2 Find as many pairs of factors of 12 as you can.

$$\underline{\quad} \times \underline{\quad} \qquad \underline{\quad} \times \underline{\quad} \qquad \underline{\quad} \times \underline{\quad}$$

Step 3 Use each pair of factors as the base and height of a parallelogram.

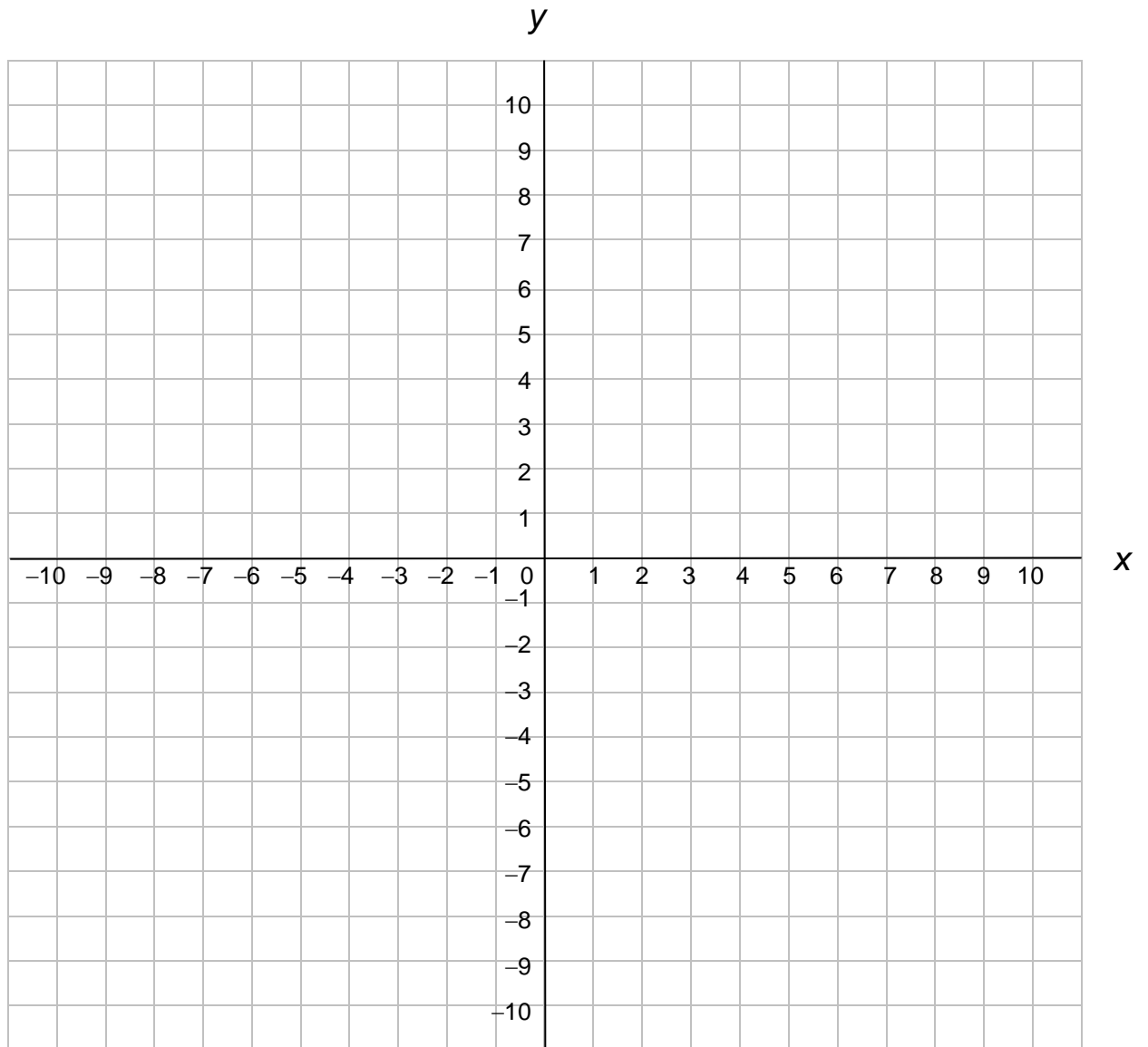
How many different parallelograms can you make?

Step 4 Draw the parallelograms you found in *Step 3* on a coordinate grid.

How many different parallelograms can you draw that have the same base and height?

Step 5 How many parallelograms can you draw that have area 12 square units?

How many more parallelograms can you draw if you use decimals?



Lesson 8.6, Question 8

On the grid on the next page

Step 1 Plot these points on the coordinate grid:
A(2, 4), B(4, 4), C(4, 2), D(6, 2), E(6, 6)
Join the points to draw polygon ABCDE.

Step 2 To translate ABCDE 4 units right and 6 units up:
Begin at vertex A.
Move 4 units to the right and 6 units up.
The translation image of vertex A(2, 4) is: A(____, ____)

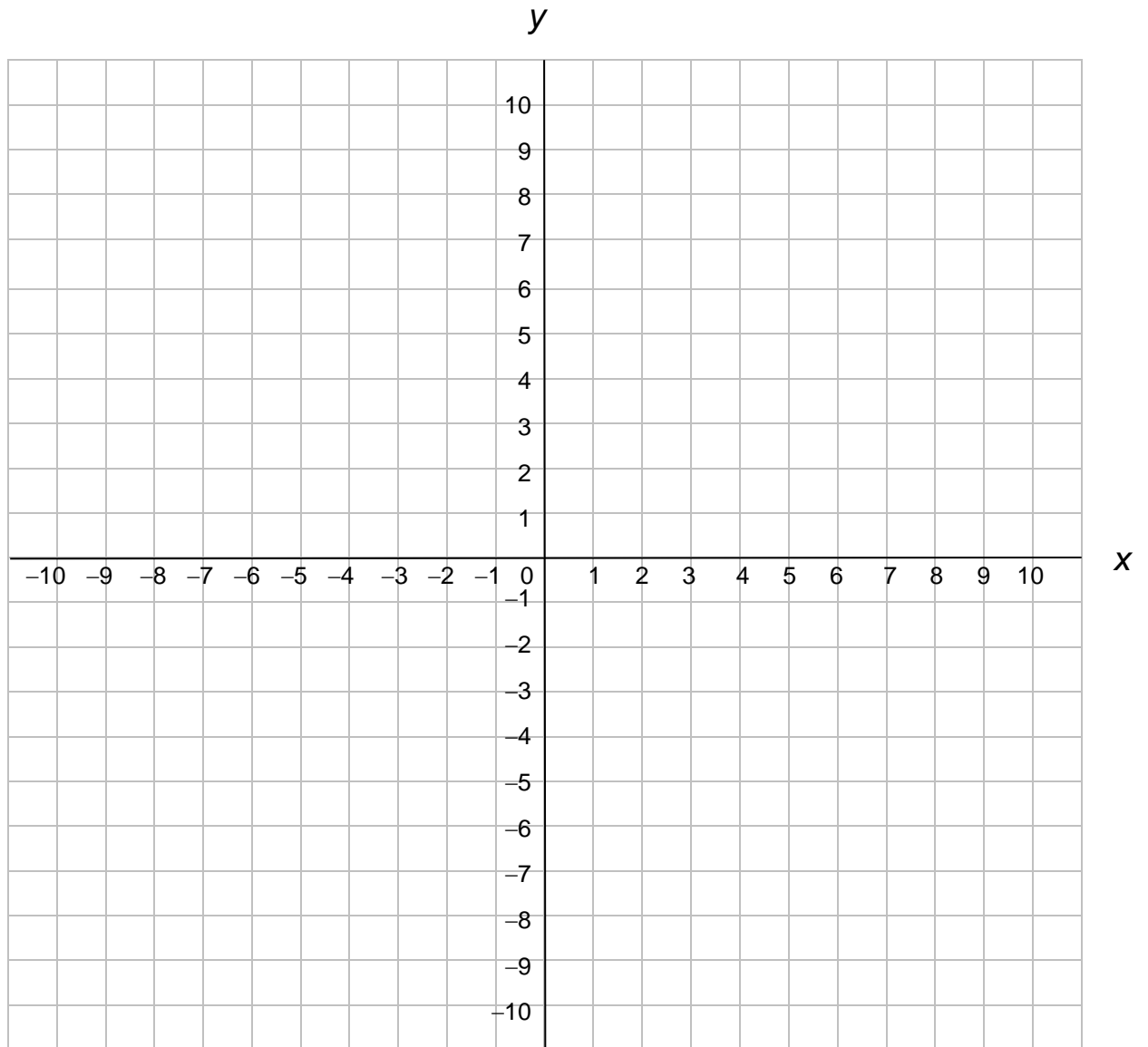
Step 3 Repeat *Step 2* for the other vertices of polygon ABCDE.
Write the coordinates of each vertex of the image polygon A'B'C'D'E':

Step 4 To reflect A'B'C'D'E' in the y -axis:
Begin at vertex A'.
The reflection image of A' is: A'' (____, ____)

Step 5 Write the coordinates of each vertex of the image polygon A''B''C''D''E''.

Step 6 How does polygon A''B''C''D''E'' compare with polygon ABCDE?

Coordinate Grid



Step-by-Step 7

Lesson 8.7, Question 6

You will need copies of a coordinate grid (Master 8.20).

Step 1 Plot these points on the coordinate grid:
 $A(6, 0)$, $B(6, 2)$, $C(5, 3)$, $D(4, 2)$, $E(2, 2)$, $F(2, 0)$
 Join the points to draw polygon ABCDEF.

Step 2 Translate each point 6 units left and 2 units up.
 Write the coordinates of the image points in the table below.

Original	$A(6, 0)$	$B(6, 2)$	$C(5, 3)$	$D(4, 2)$	$E(2, 2)$	$F(2, 0)$
Translation Image						

Step 3 Rotate each image point 90° counterclockwise about the origin.
 Use the results in *Step 2* to complete the table below.

Translation Image						
Rotation Image						

Step 4 Compare polygons ABCDEF and $A''B''C''D''E''F''$. What do you notice?

