

Octagon Tile

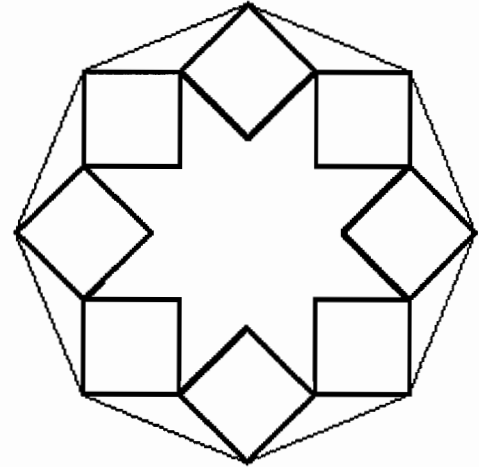
T1

This problem gives you the chance to:

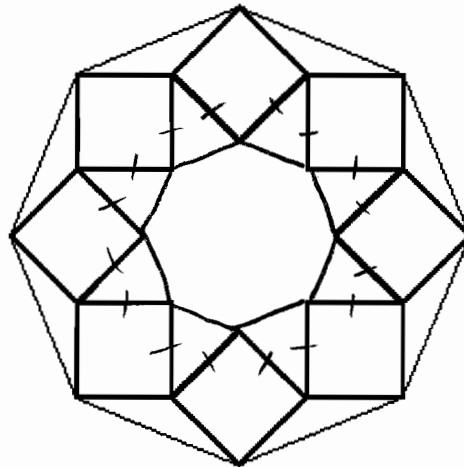
- work with patterns and shape

Here is a design for a tile in the shape of a regular octagon.

The design is made from eight squares all the same size placed symmetrically round the octagon.



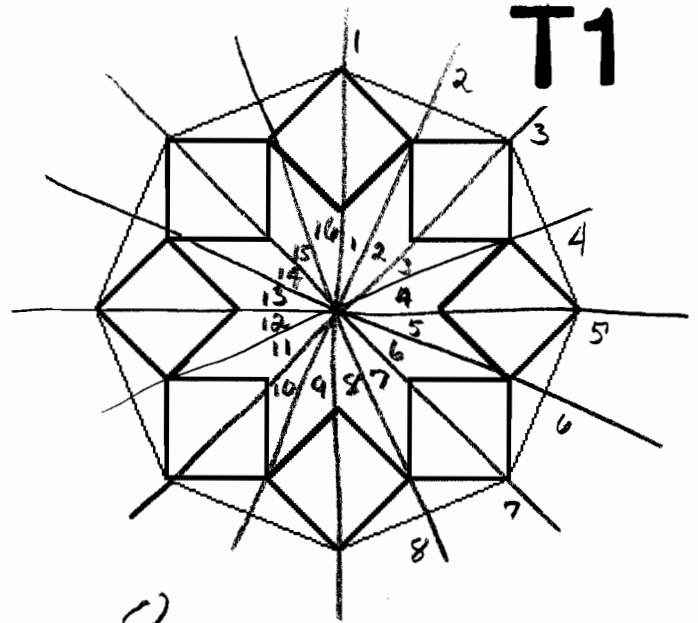
1. Join eight points in the diagram to make another regular octagon.



2. The inner sides of the squares form a 'star' in centre of the tile.

How many sides does the star have? 16

3. Draw in all the lines of symmetry of the star.

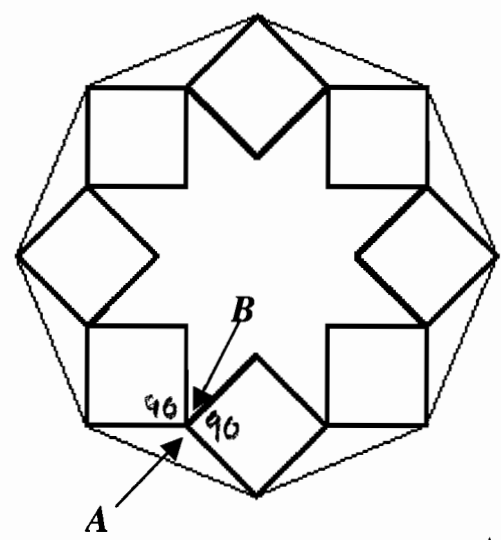


How many lines of symmetry does the star have? 8

What is the angle between each line of symmetry and the next? 22.5

Explain how you know.
 $360 \div 16$ is at the center

4.



Angle A is 135° . Calculate the measure of angle B. 45

Show your work.
 $90 + 90 + 135 = 315$
 $360 - 315 = 45$

Octagon Tile

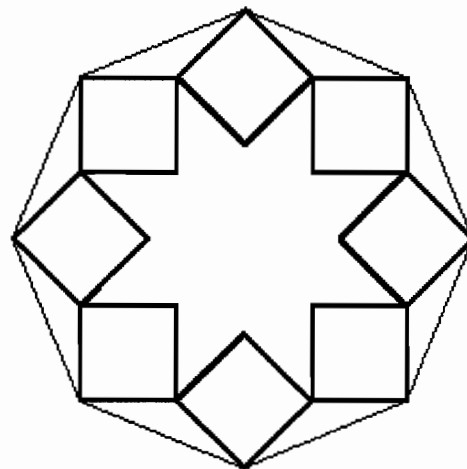
T2

This problem gives you the chance to:

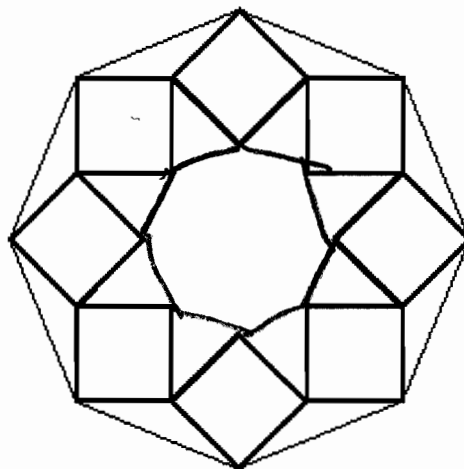
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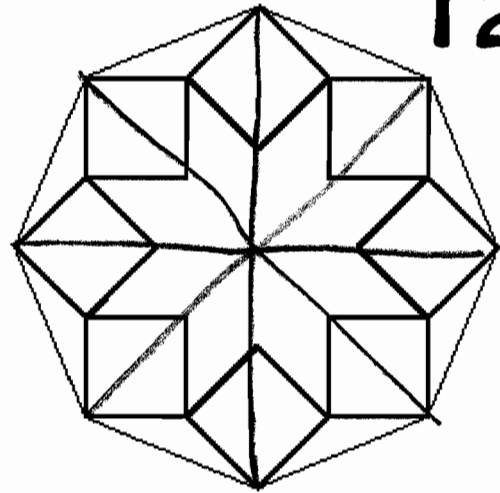
2. The inner sides of the squares form a 'star' in centre of the tile.

How many sides does the star have?

8

3. Draw in all the lines of symmetry of the star.

T2



How many lines of symmetry does the star have?

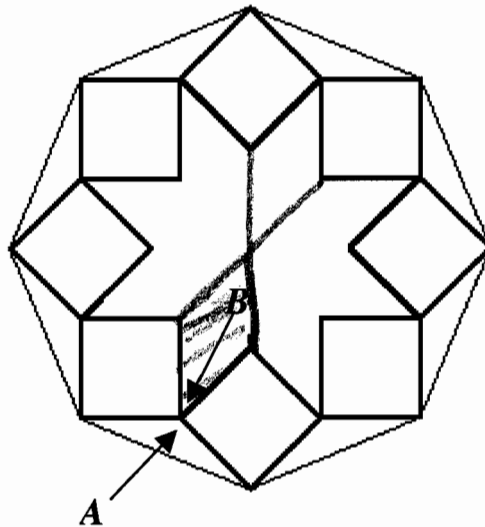
4

What is the angle between each line of symmetry and the next?
Explain how you know.

45°

$360/8 = 45$

4.



Angle A is 135°. Calculate the measure of angle B.
Show your work.

45°

There is a diamond with
45 each end.

Octagon Tile

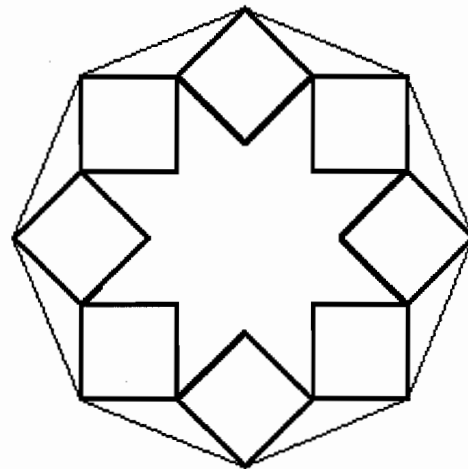
T3

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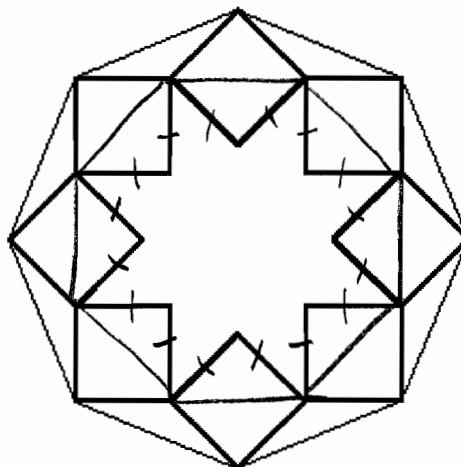
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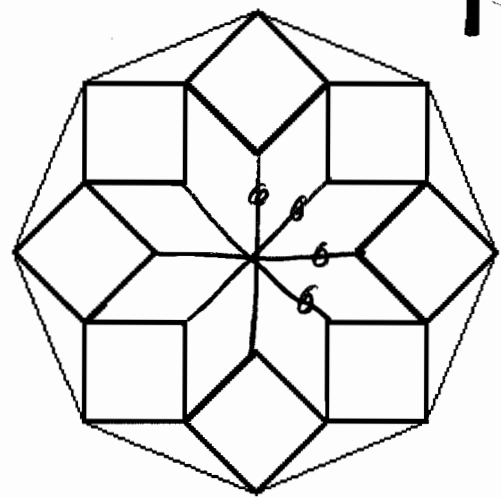


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How many sides does the star have?

16

3. Draw in all the lines of symmetry of the star.



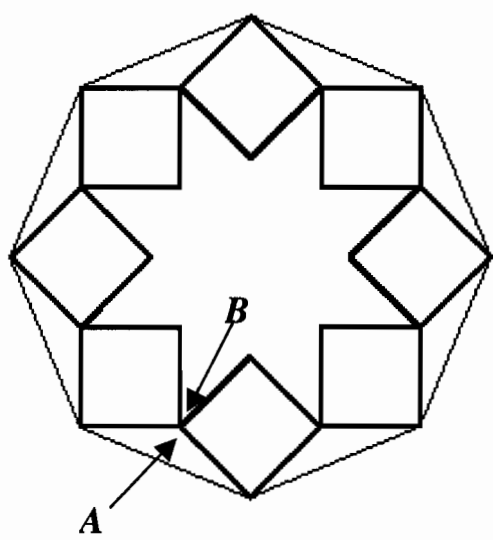
How many lines of symmetry does the star have? 4

What is the angle between each line of symmetry and the next? 45°

Explain how you know.

every other line of symmetry = 90°
half of 90° = 45°

4.



Angle A is 135°. Calculate the measure of angle B. 45°

Show your work.

two 90° squares and the 135°
from 360°

Octagon Tile

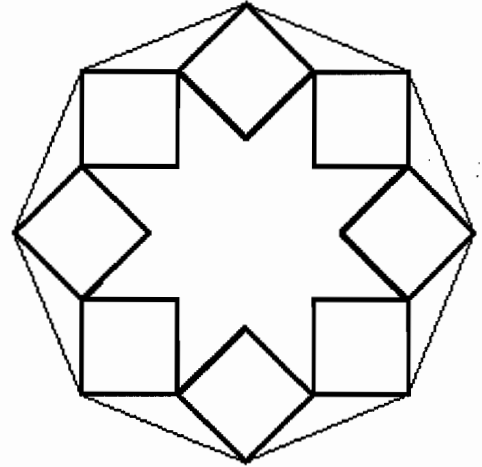
T4

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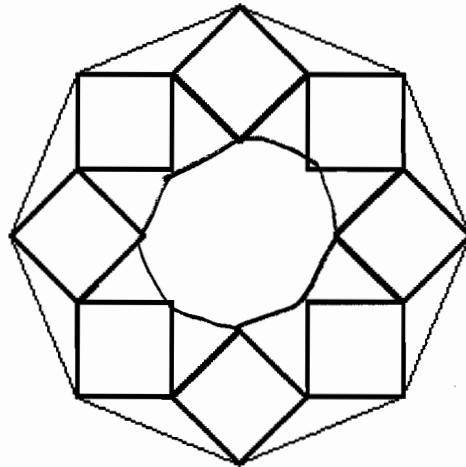
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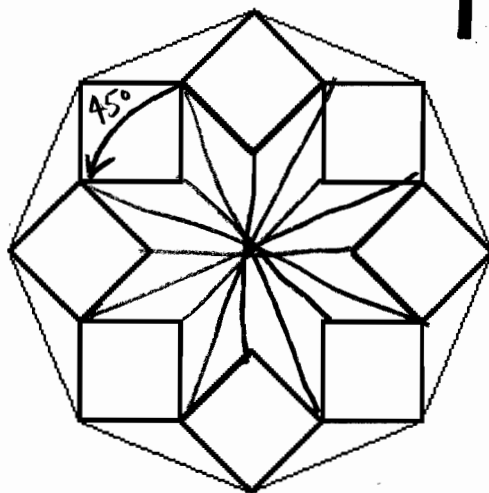
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2. The inner sides of the squares form a 'star' in centre of the tile.

How many sides does the star have? 16

3. Draw in all the lines of symmetry of the star.



How many lines of symmetry does the star have? _____

8

What is the angle between each line of symmetry and the next? _____

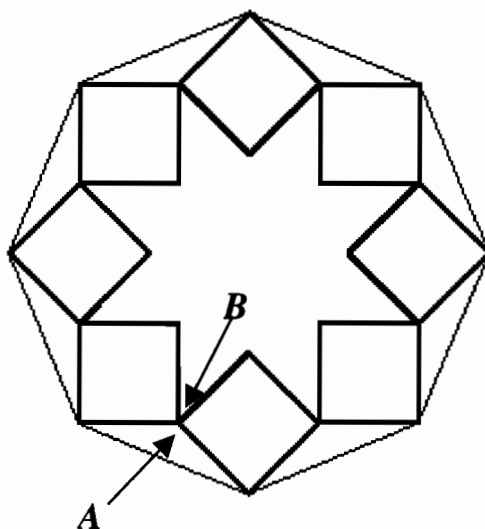
45°

Explain how you know.

there are 8 turns and take

$$360 \div 8 = 45^\circ$$

4.



Angle A is 135° . Calculate the measure of angle B. _____

45°

Show your work.

$$380 - (135 + 90 + 90)$$

Octagon Tile

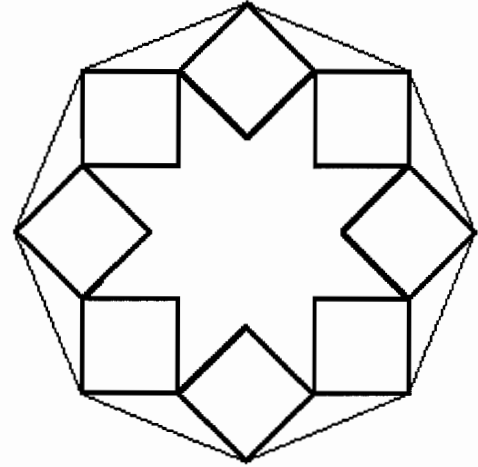
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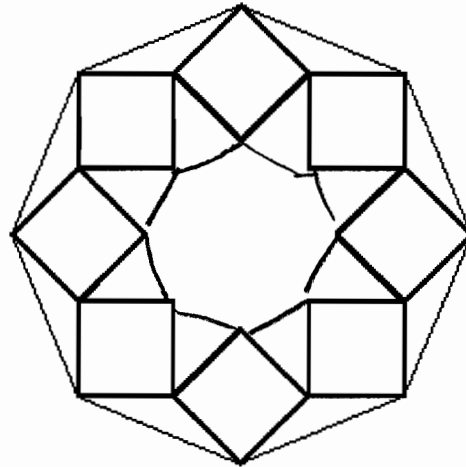
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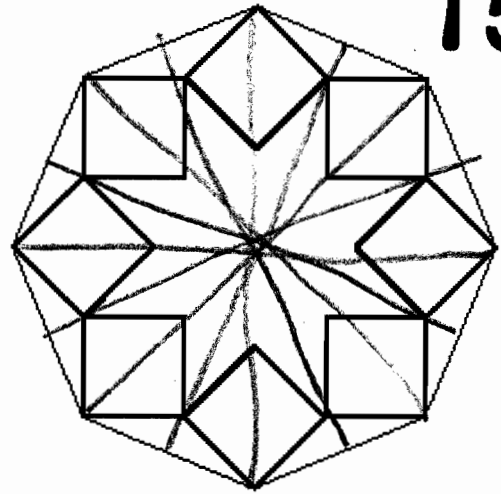


2. The inner sides of the squares form a 'star' in centre of the tile.

How many sides does the star have? 16

3. Draw in all the lines of symmetry of the star.

T5



How many lines of symmetry does the star have?

8

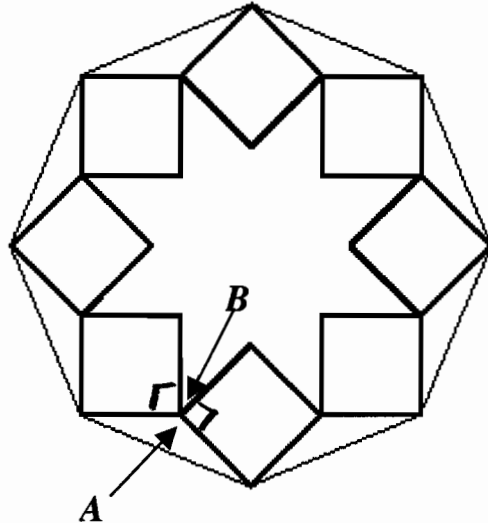
What is the angle between each line of symmetry and the next?

22.5°

Explain how you know.

I saw below that 1 point is 45° so I \div by 2

4.



Angle A is 135° . Calculate the measure of angle B.

45°

Show your work.

$360 - 40 - 40 - 135$

Octagon Tile

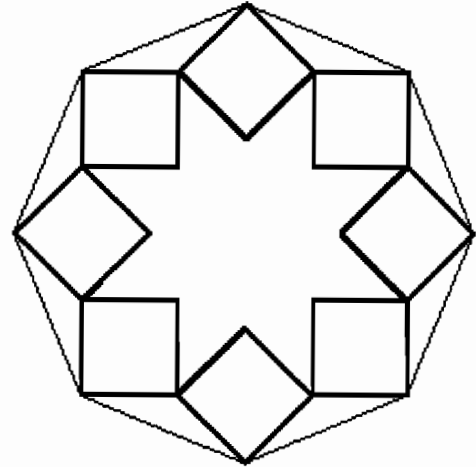
S1

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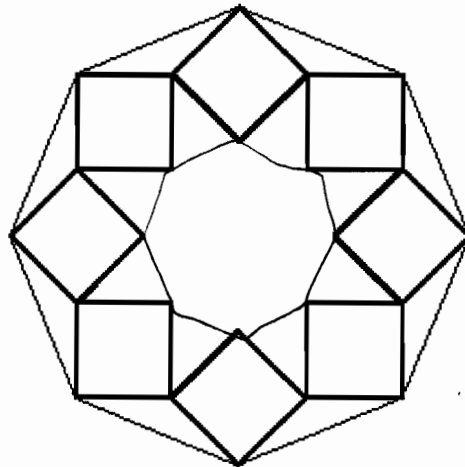
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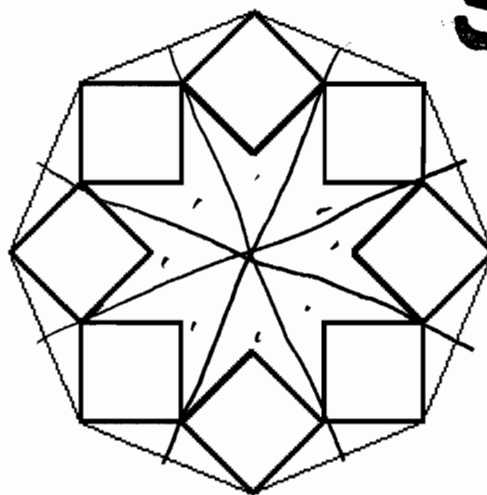


2. The inner sides of the squares form a 'star' in centre of the tile.

How many sides does the star have? 16

3. Draw in all the lines of symmetry of the star.

S1

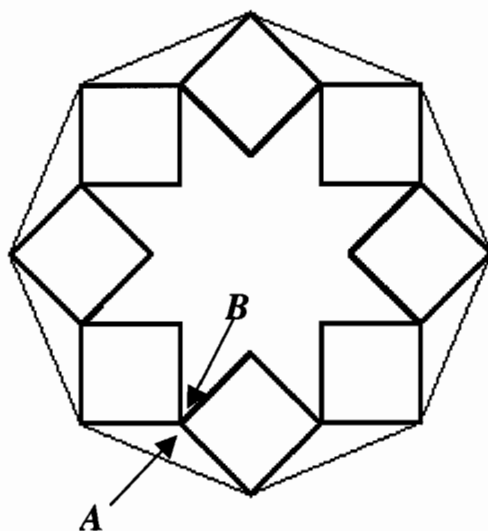


How many lines of symmetry does the star have? 4

What is the angle between each line of symmetry and the next? 45°

Explain how you know. 360 ÷ 8

4.



Angle A is 135°. Calculate the measure of angle B. 45°

Show your work.

135 + 90 + 90 = 315

360 - 315 = 45



Octagon Tile

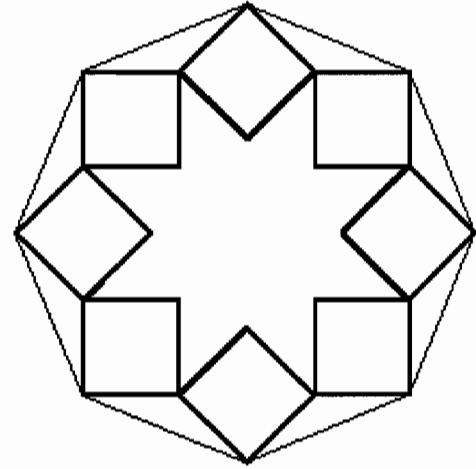
S2

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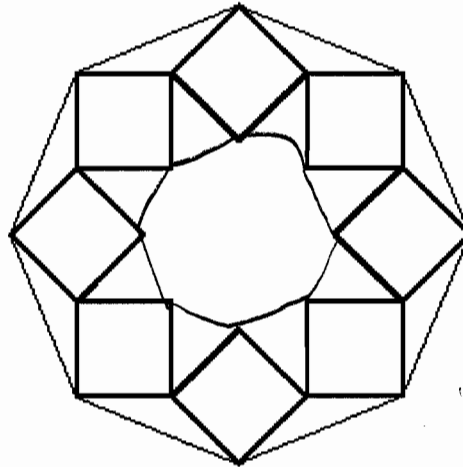
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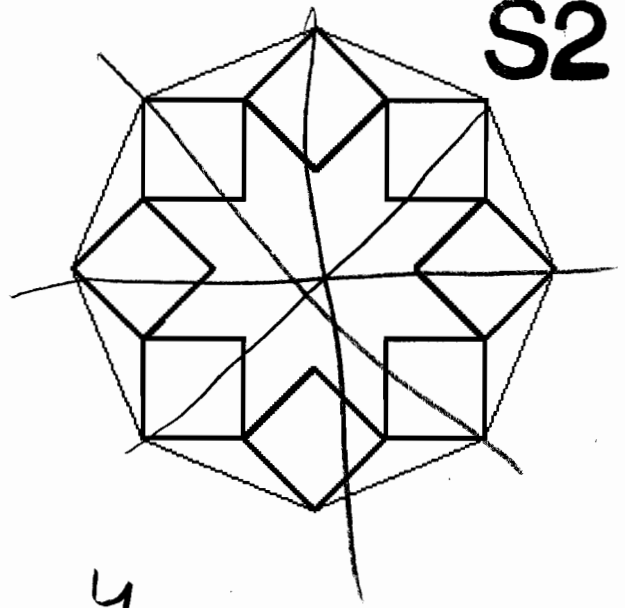


2. The inner sides of the squares form a 'star' in centre of the tile.

How many sides does the star have? 14

3. Draw in all the lines of symmetry of the star.

S2



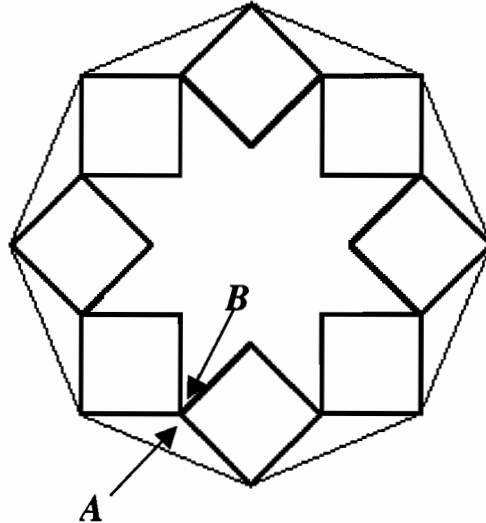
How many lines of symmetry does the star have? 4

What is the angle between each line of symmetry and the next?
Explain how you know.

45°

$360 \div 8 = 45^\circ$

4.



Angle A is 135° . Calculate the measure of angle B.
Show your work.

67.5°

$135 \div 2$

Octagon Tile

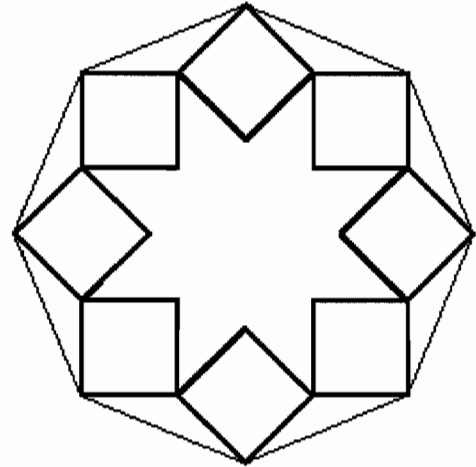
S3

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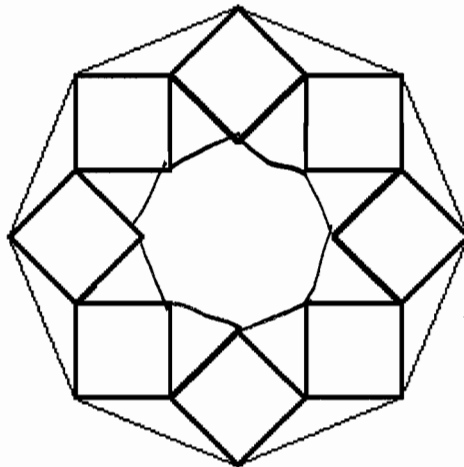
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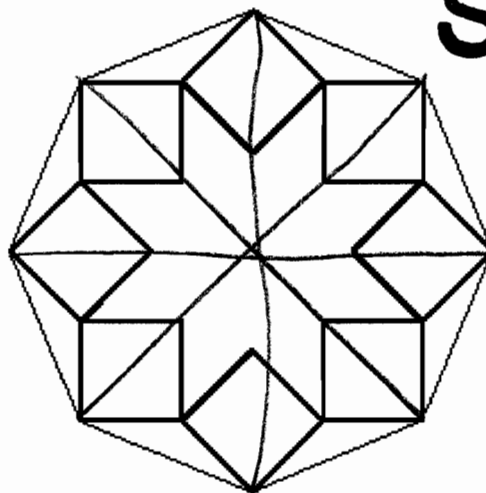
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How many sides does the star have?

16

3. Draw in all the lines of symmetry of the star.

S3



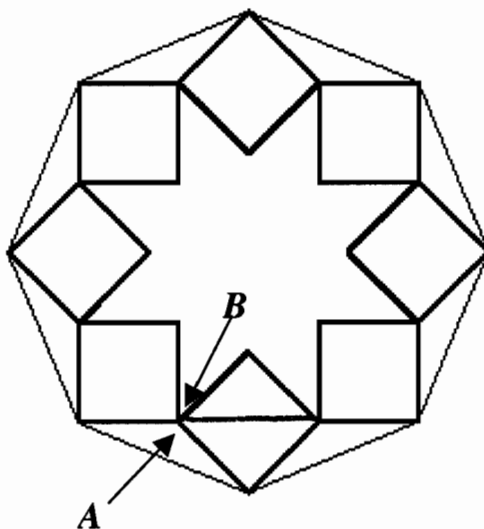
How many lines of symmetry does the star have? 4

What is the angle between each line of symmetry and the next?
Explain how you know.

45°

$$360 \div 8$$

4.



Angle A is 135° . Calculate the measure of angle B.
Show your work.

45°

$$90 \div 2$$

Octagon Tile

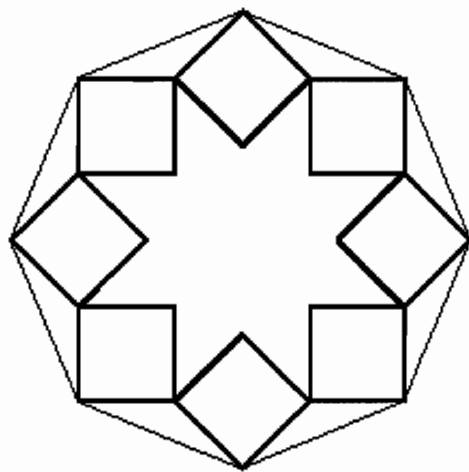
S4

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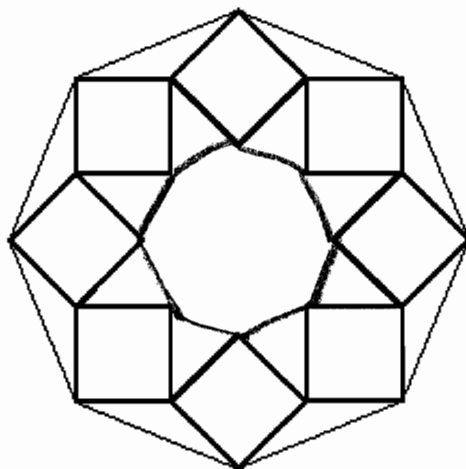
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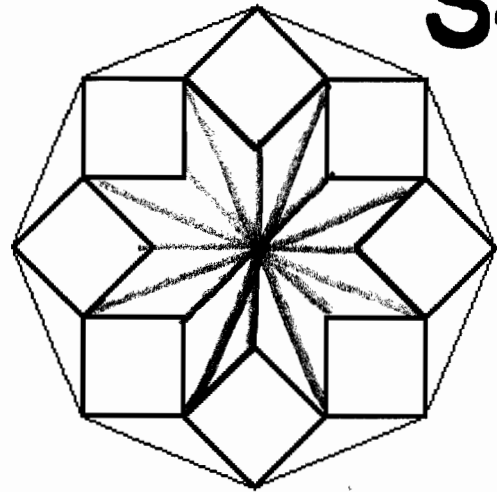
2. The inner sides of the squares form a 'star' in centre of the tile.

How many sides does the star have?

16

3. Draw in all the lines of symmetry of the star.

S4

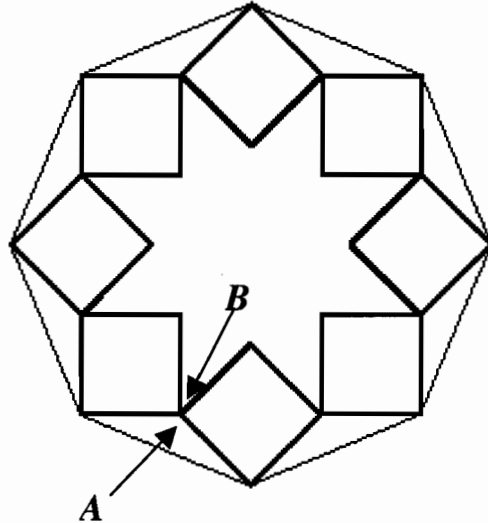


How many lines of symmetry does the star have? 8

What is the angle between each line of symmetry and the next? acute
Explain how you know.

the angles are smaller than 90°

4.



Angle A is 135° . Calculate the measure of angle B.
Show your work.

acute

the angle is a bit bigger but still less than 90°

Octagon Tile

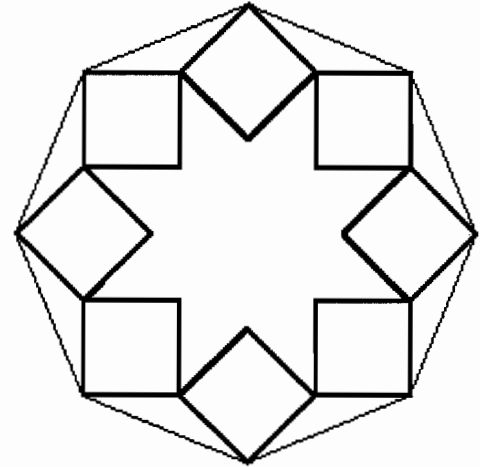
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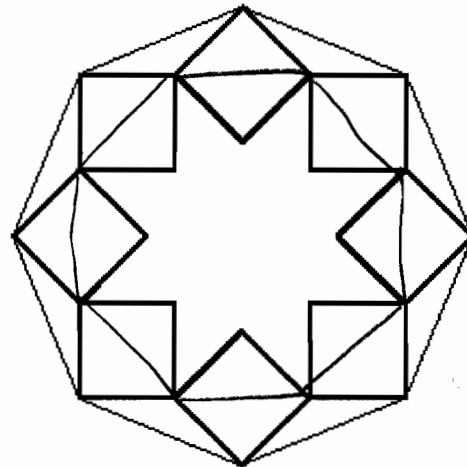
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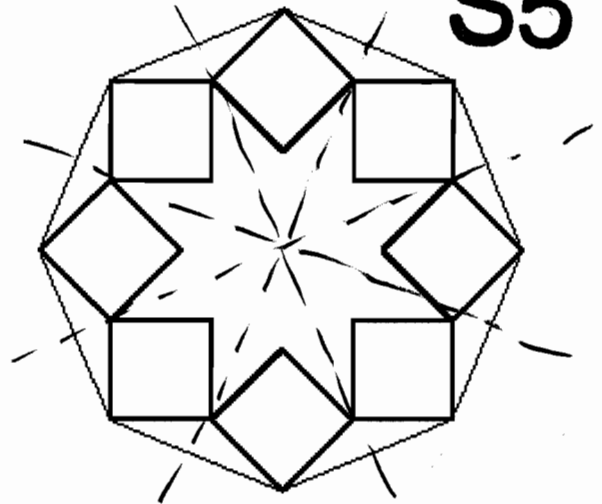


2. The inner sides of the squares form a 'star' in centre of the tile.

How many sides does the star have? 16

3. Draw in all the lines of symmetry of the star.

S5

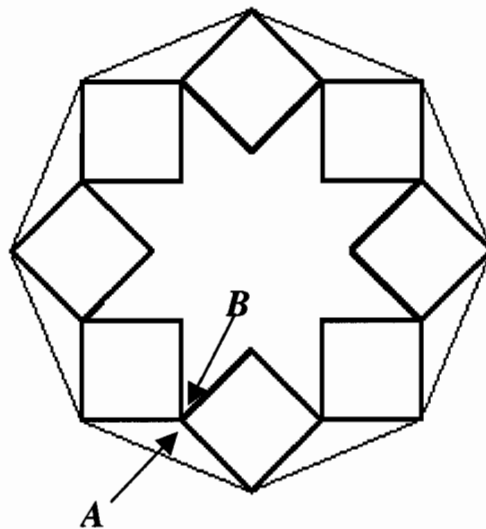


How many lines of symmetry does the star have? 4

What is the angle between each line of symmetry and the next? 45°

Explain how you know.
because a circle is 360° so just divide 360° by 8

4.



Angle A is 135°. Calculate the measure of angle B. 35°

Show your work.
360 - 325

Octagon Tile

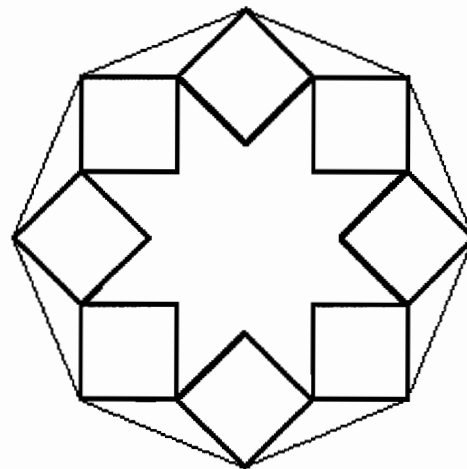
S6

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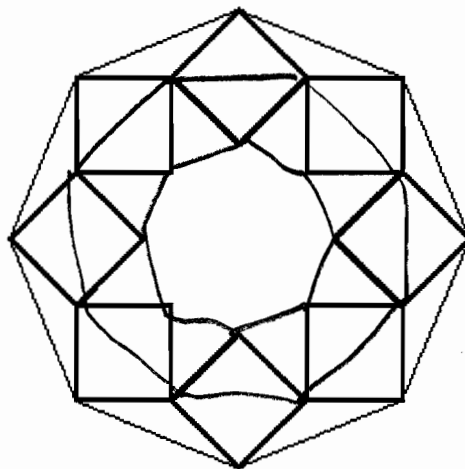
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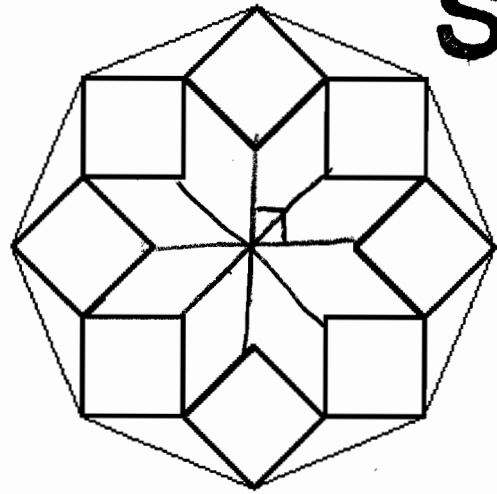


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How many sides does the star have? 16

3. Draw in all the lines of symmetry of the star.

S6

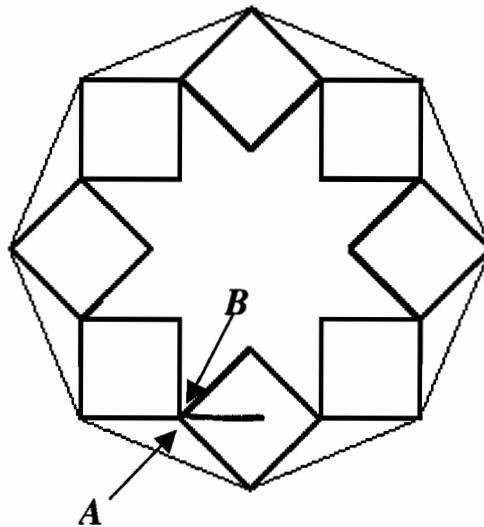


How many lines of symmetry does the star have? 4

What is the angle between each line of symmetry and the next? 45°
 Explain how you know.

Because the angle of 1st and 3rd line of symmetry is 90°

4.



Angle A is 135° . Calculate the measure of angle B.
 Show your work.

30°

It is less than 90°

Octagon Tile

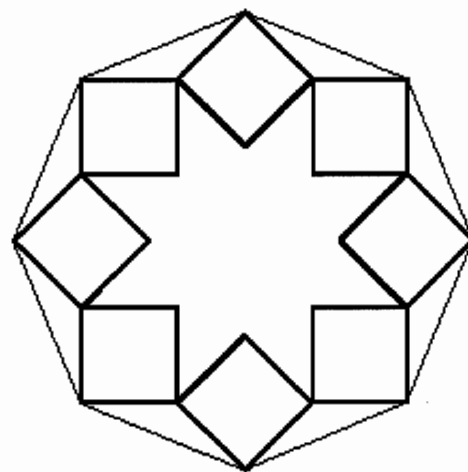
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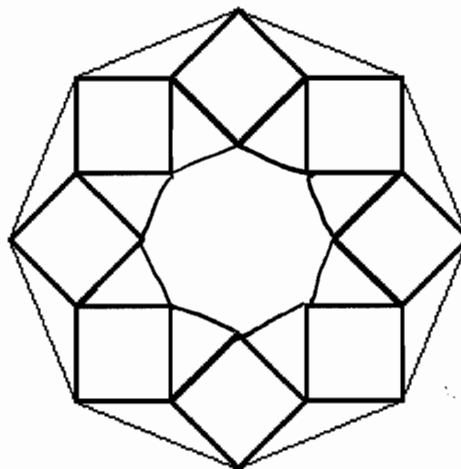
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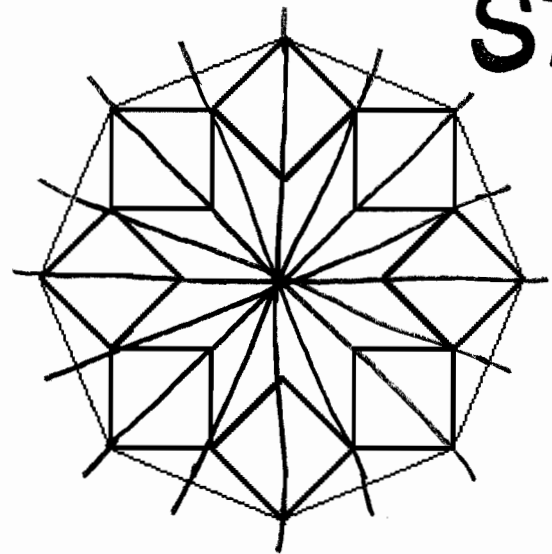


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S7



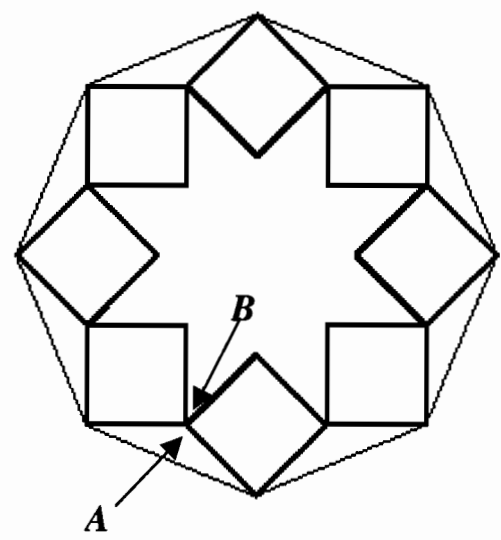
How many lines of symmetry does the star have? 16

What is the angle between each line of symmetry and the next? 20°

Explain how you know.

$$\frac{320}{16} = 20^\circ$$
 Full Circle # of lines

4.



Angle A is 135°. Calculate the measure of angle B. 5°
 Show your work.

$$320 - (135 + 90 + 90) = 320 - 315$$

Octagon Tile

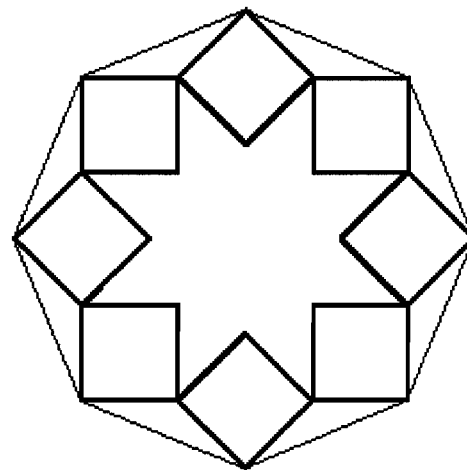
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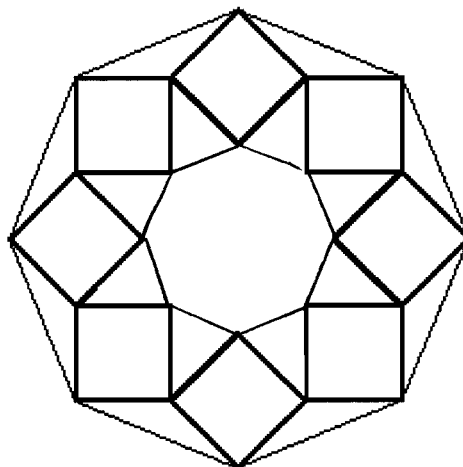
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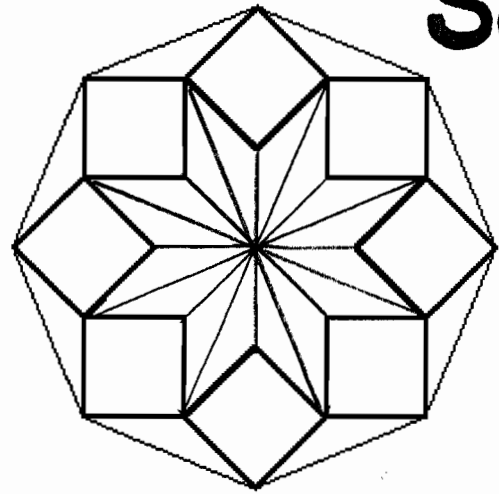


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How many sides does the star have? 16

3. Draw in all the lines of symmetry of the star.

S8



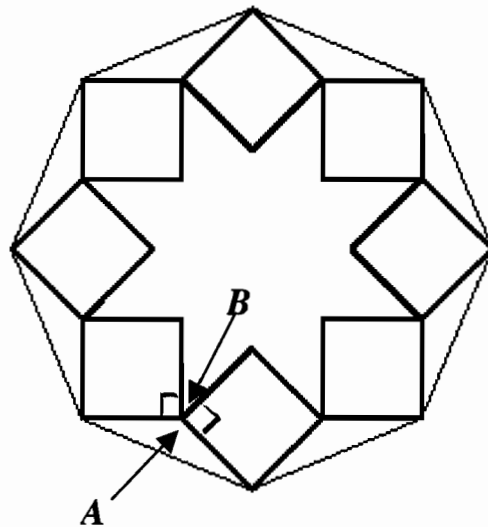
How many lines of symmetry does the star have? 8

What is the angle between each line of symmetry and the next? 45°

Explain how you know.

Because I divided 360 by 8
because all of the angles should equal up to 360°

4.



Angle A is 135° . Calculate the measure of angle B.

Show your work.

$2 \cdot 90 + 135 = 315$ $360 - 45^\circ$

Octagon Tile

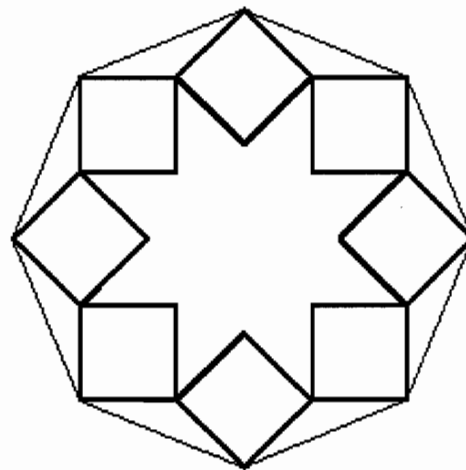
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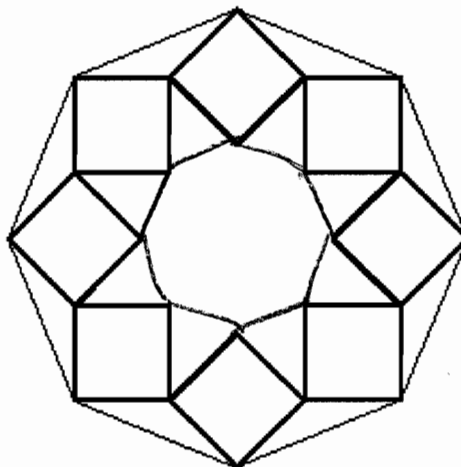
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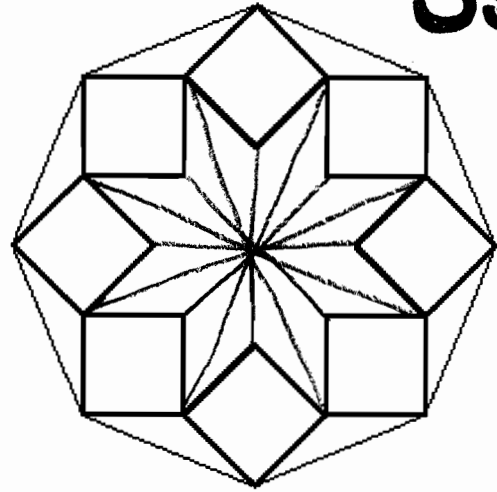
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How many sides does the star have? 16 sides

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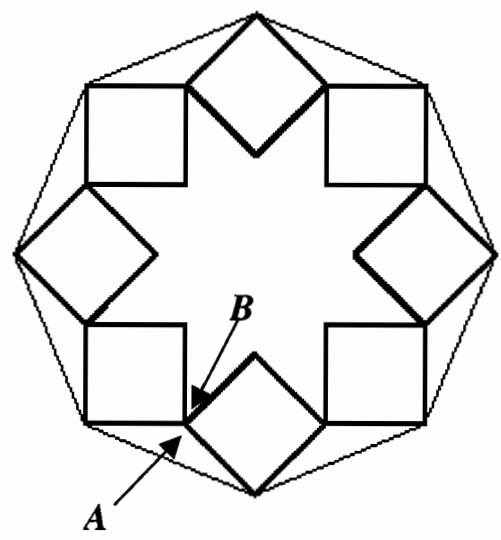


How many lines of symmetry does the star have? 8

What is the angle between each line of symmetry and the next? 30°

Explain how you know.
because every triangle is 90° & 90 ÷ 3 = 30.

4.



Angle A is 135°. Calculate the measure of angle B. 40°
 Show your work.

I measured it

Octagon Tile

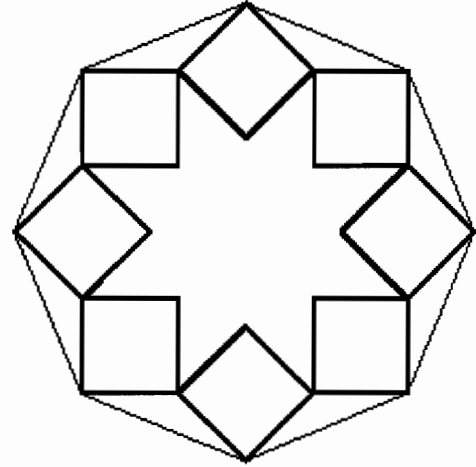
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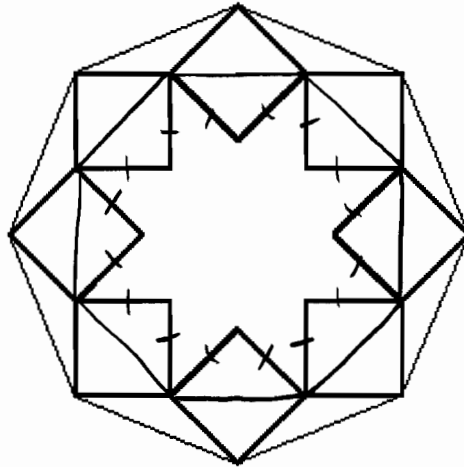
- work with patterns and shape

Here is a design for a tile in the shape of a regular octagon.

The design is made from eight squares all the same size placed symmetrically round the octagon.



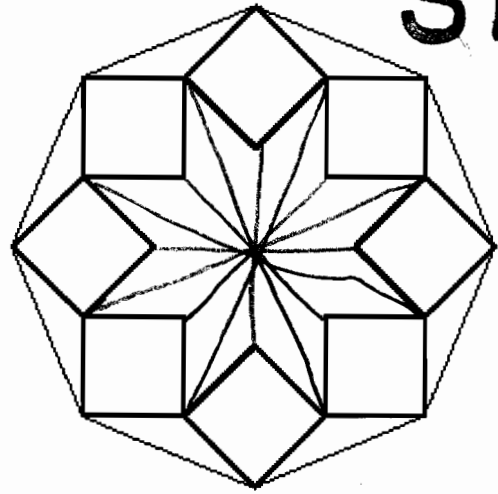
1. Join eight points in the diagram to make another regular octagon.



2. The inner sides of the squares form a 'star' in centre of the tile.

How many sides does the star have? 16

3. Draw in all the lines of symmetry of the star.

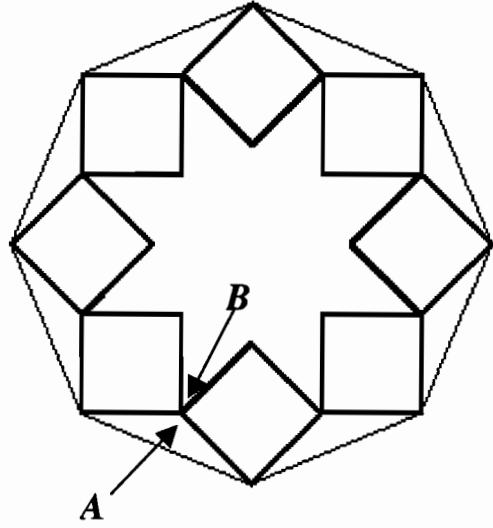


How many lines of symmetry does the star have? 8

What is the angle between each line of symmetry and the next? 22.5°

Explain how you know. $360^\circ \div 16$ (lines from center) = 22.5°

4.



Angle A is 135° . Calculate the measure of angle B. 45°

Show your work.

$$135 + 90 + 90 = 315 -$$

$$\underline{45}$$