

Octagon Tile

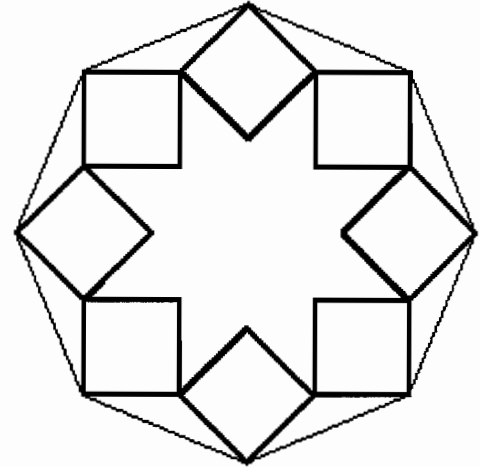
T1

This problem gives you the chance to:

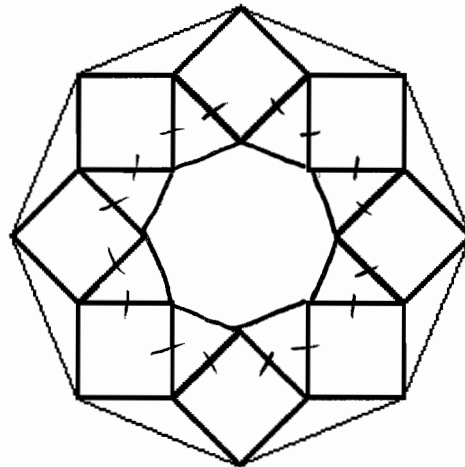
- work with patterns and shape

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

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

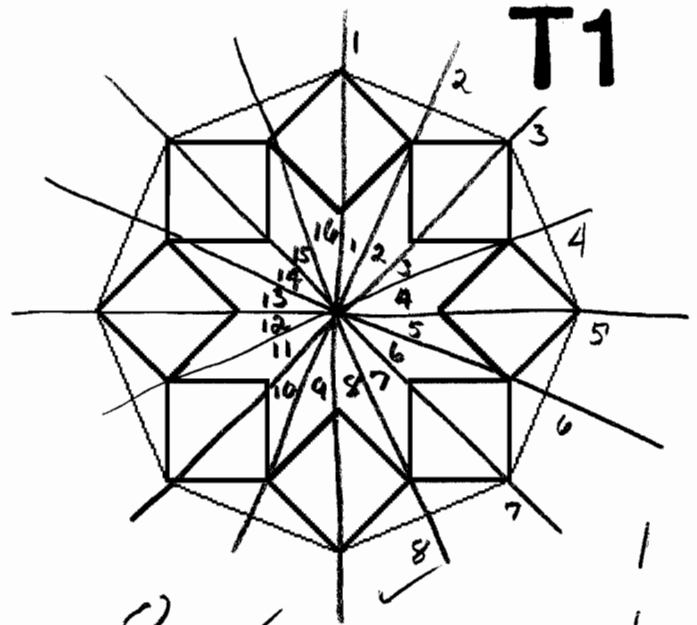
How many sides does the star have?

16



1

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

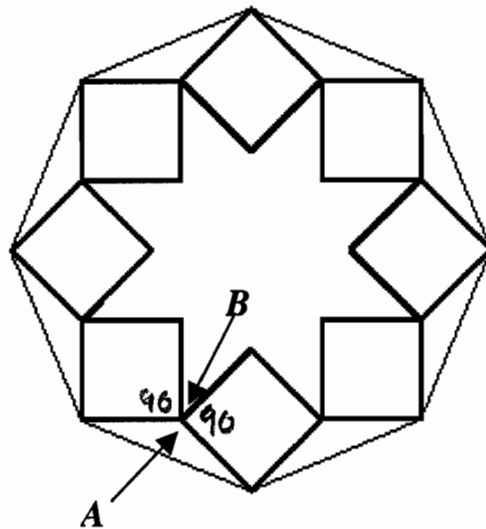


How many lines of symmetry does the star have? 8 ✓

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.
 Show your work.

$90 + 90 + 135 = 315$ ✓

$360 - 315 = 45$ ✓

Octagon Tile

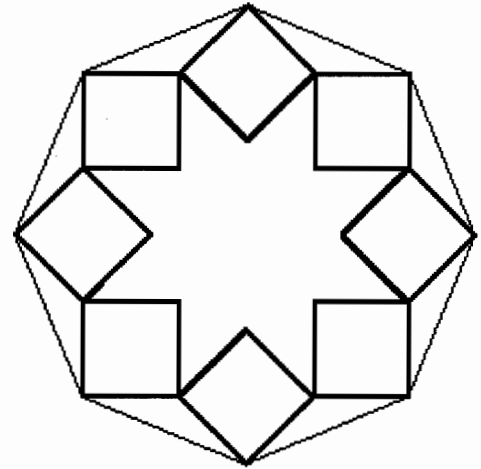
T2

This problem gives you the chance to:

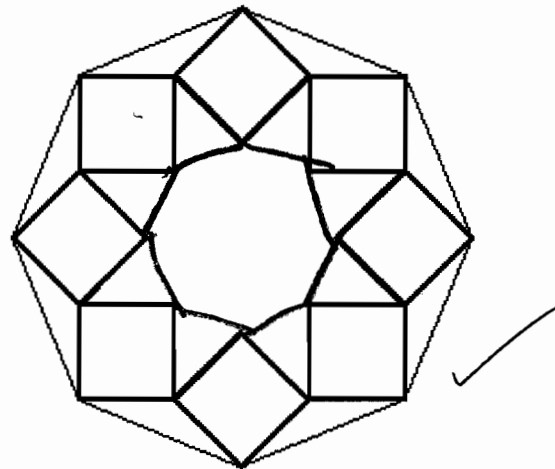
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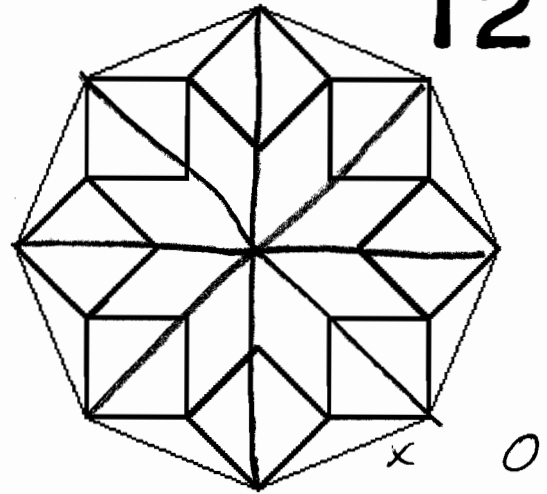
2. The inner sides of the squares form a 'star' in centre of the tile.

How many sides does the star have? 8 ×

0

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

T2

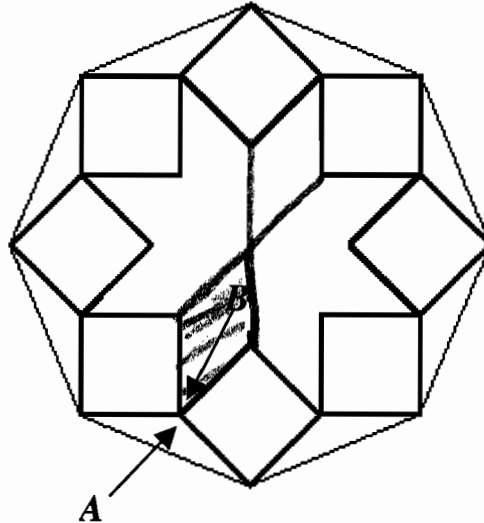


How many lines of symmetry does the star have? 4 ✓ ft 1

What is the angle between each line of symmetry and the next? 45° ✓ ft 1

Explain how you know. 360/8 = 45 ✓ ft 2

4.



Angle A is 135°. Calculate the measure of angle B. 45° ✓ 1

Show your work.

There is a diamond with
45 each end. 1

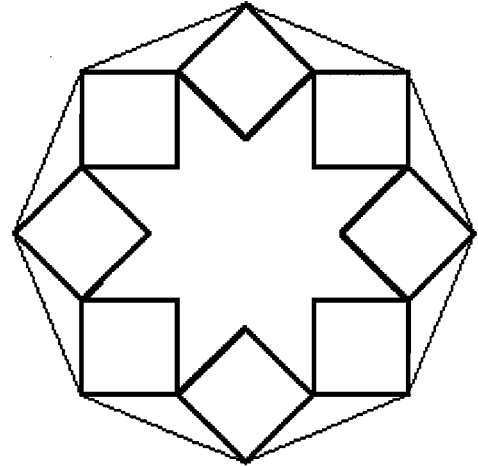
Octagon Tile

T3

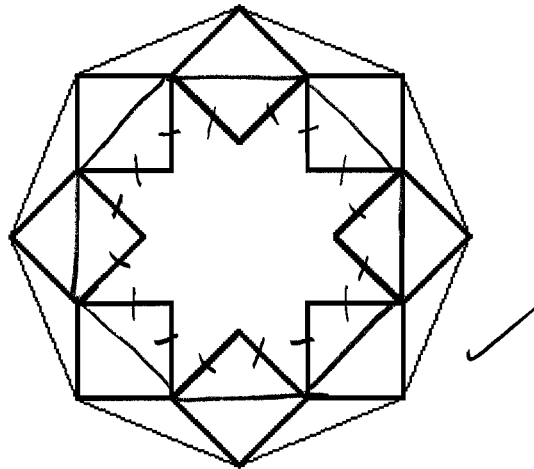
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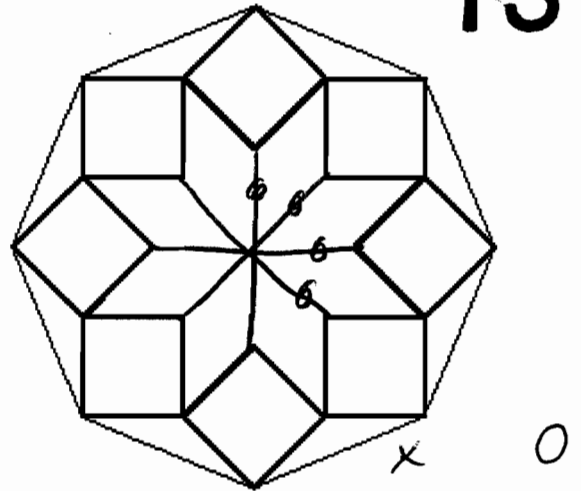
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How many sides does the star have?

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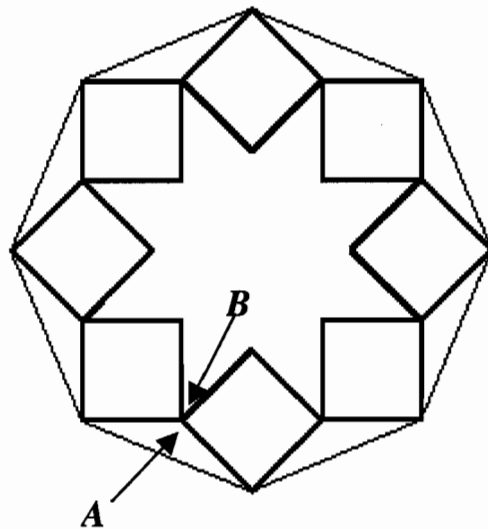


How many lines of symmetry does the star have? 4 ✓ ft 1

What is the angle between each line of symmetry and the next? 45° ✓ ft 1

Explain how you know.
every other line of symmetry = 90° ft 2
half of 90° = 45° ✓

4.



Angle A is 135°. Calculate the measure of angle B. 45° ✓ 1

Show your work.
two 90° squares and the 135° ✓ 1
from 360°



Octagon Tile

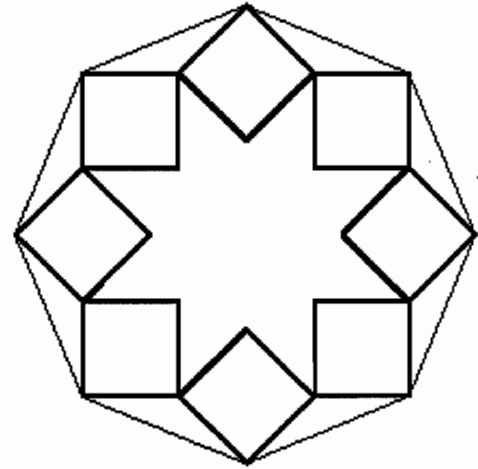
T4

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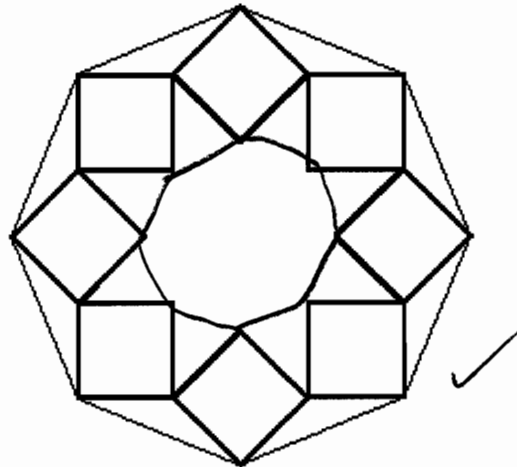
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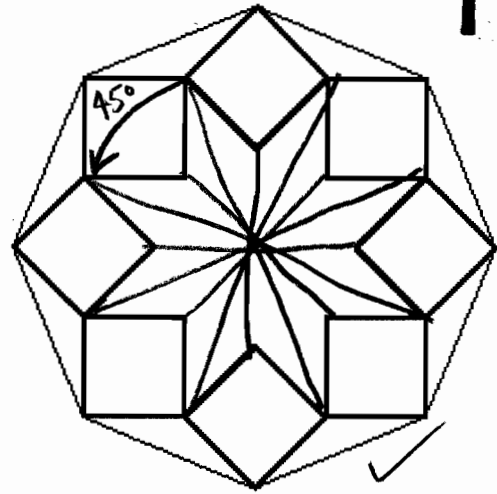
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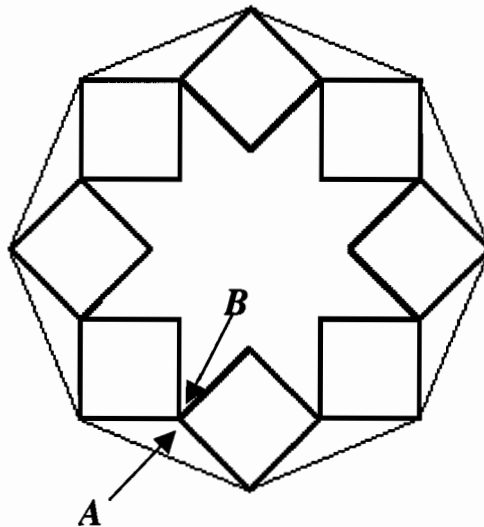


How many lines of symmetry does the star have? 8

What is the angle between each line of symmetry and the next? 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.
 Show your work.

$360 - (135 + 90 + 90)$
BOD

Octagon Tile

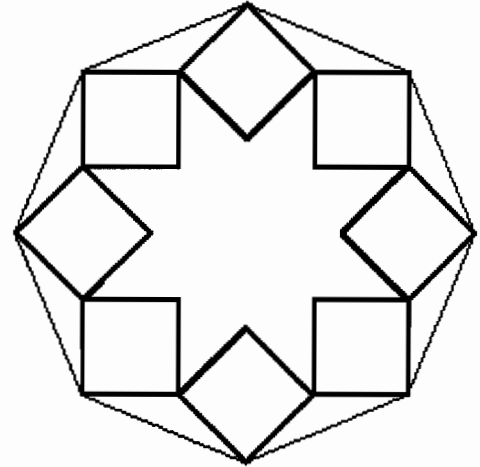
T5

This problem gives you the chance to:

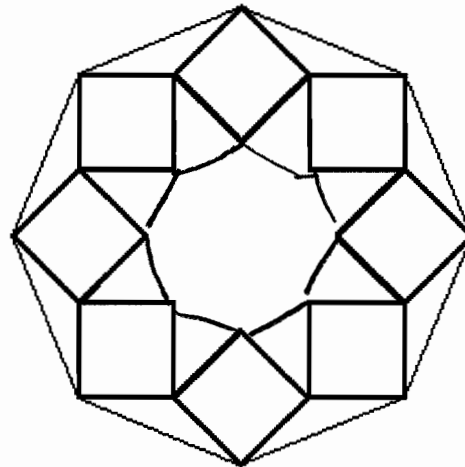
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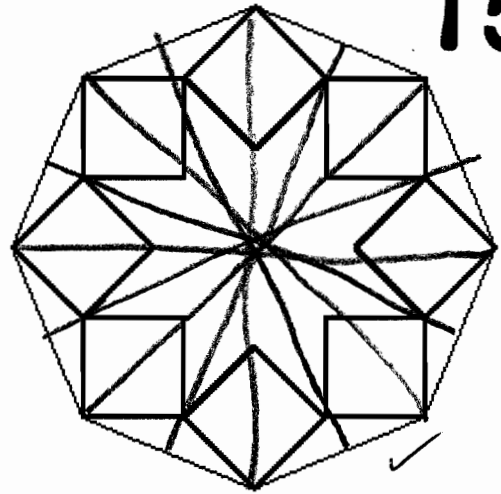
2. The inner sides of the squares form a 'star' in centre of the tile.

How many sides does the star have? 16 ✓

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

T5



How many lines of symmetry does the star have?

8 ✓

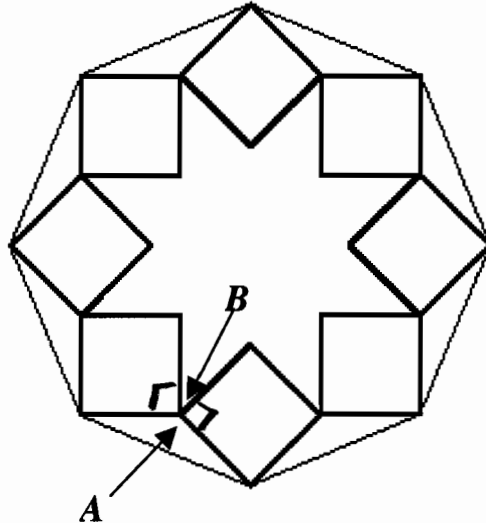
What is the angle between each line of symmetry and the next?

22.5° ✓

Explain how you know.

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

4.



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

45° ✓

Show your work.

360 - 40 - 40 - 135 ✓

Octagon Tile

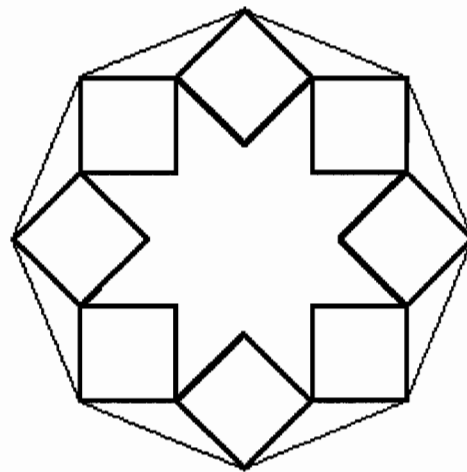
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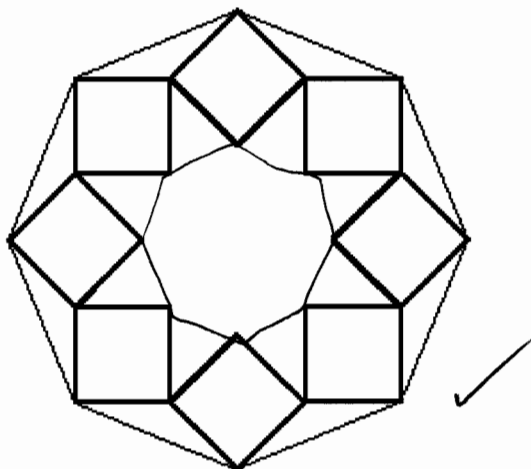
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How many sides does the star have?

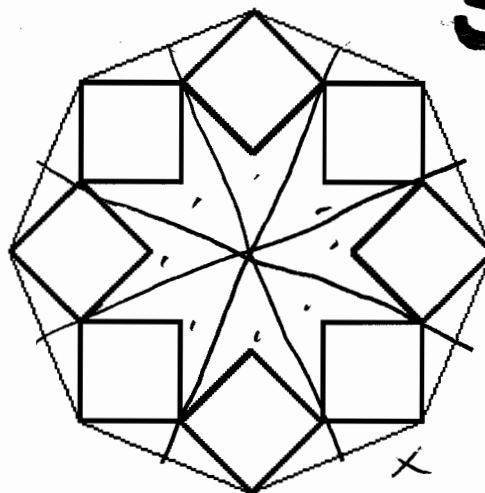
16



1

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

S1



How many lines of symmetry does the star have?

4 ✓

0

1ft

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

45° ✓

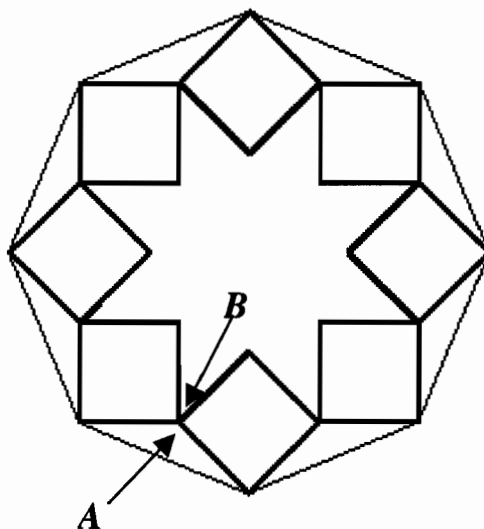
1ft

$360 \div 8$

✓

2ft

4.



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

45° ✓

1

$135 + 90 + 90 = 315$

1

$360 - 315 = 45$ ✓



Octagon Tile

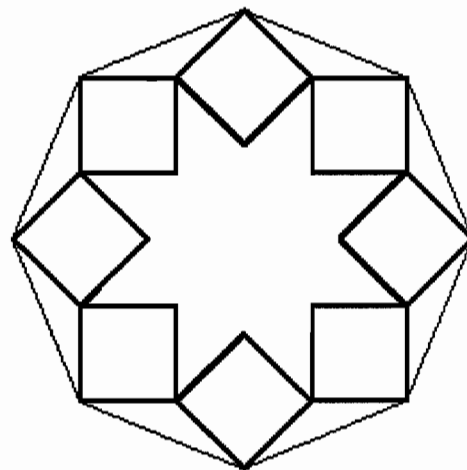
S2

This problem gives you the chance to:

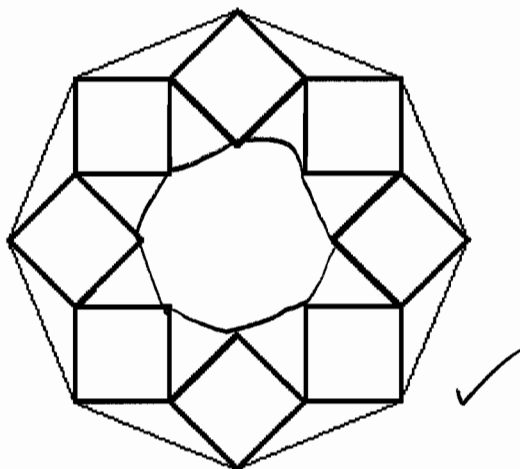
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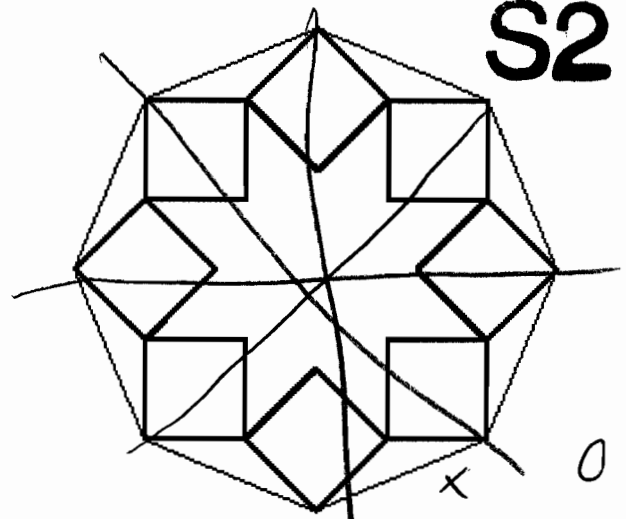
14

x

0

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

S2



How many lines of symmetry does the star have?

4 ✓

ft 1

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

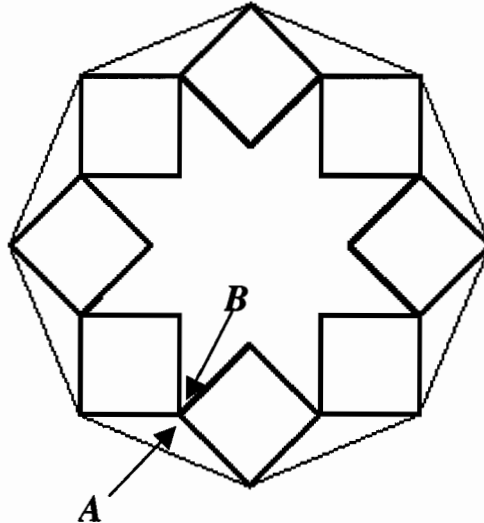
45° ✓

ft 1

360 ÷ 8 = 45° ✓

ft 2

4.



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

67.5° x

0

135 ÷ 2 x

0

Octagon Tile

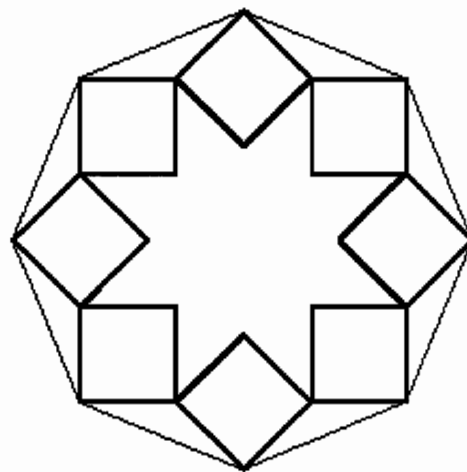
S3

This problem gives you the chance to:

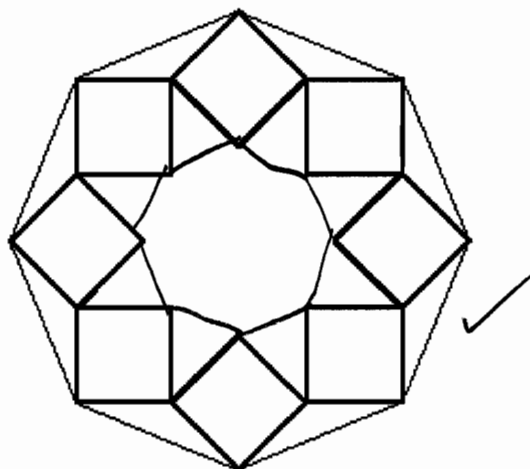
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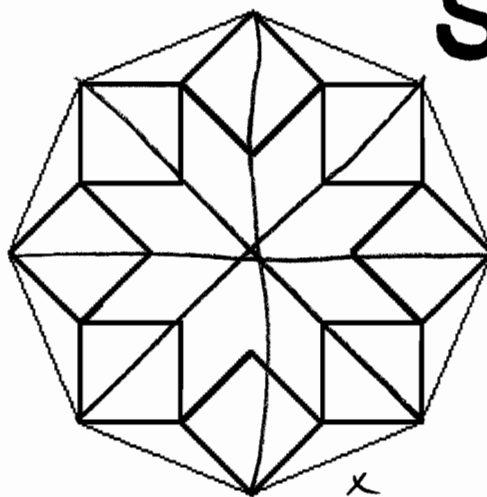
How many sides does the star have?

16 ✓

1

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

S3



How many lines of symmetry does the star have?

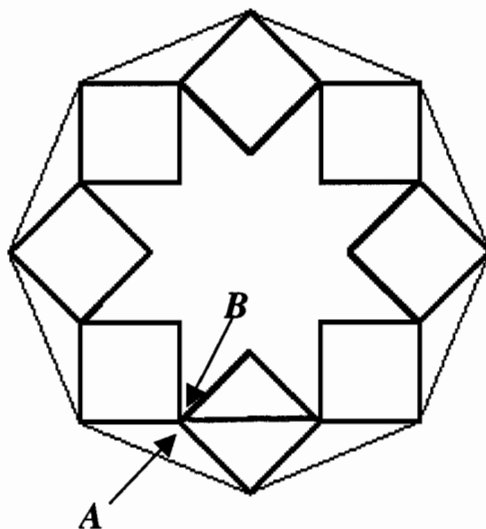
4 ✓ ft 1

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

45° ✓ ft 1

360 ÷ 8 ✓ ft 2

4.



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

45° ✓ 1

90 ÷ 2 A 0

Octagon Tile

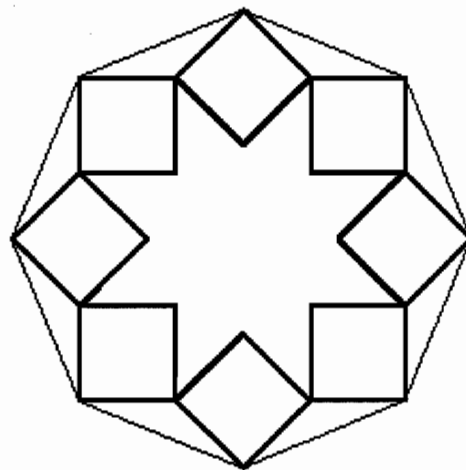
S4

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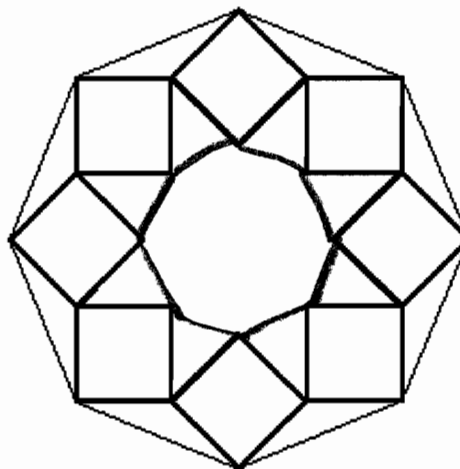
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How many sides does the star have?

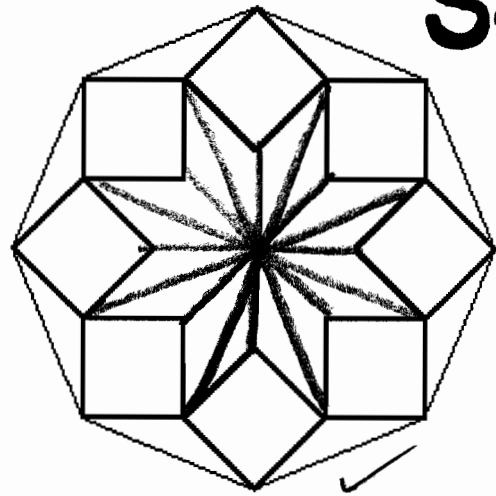
16



1

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

S4

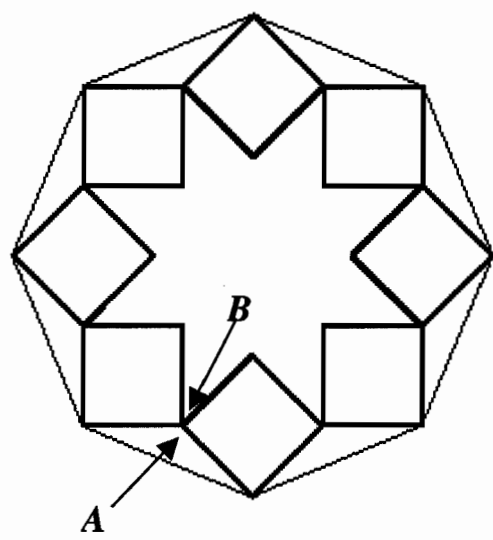


How many lines of symmetry does the star have? 8 ✓ 1

What is the angle between each line of symmetry and the next? acute × 0

Explain how you know. the angles are smaller than 90° × 0

4.



Angle A is 135° . Calculate the measure of angle B. acute × 0

Show your work. the angle is a bit bigger but still less than 90° × 0

Octagon Tile

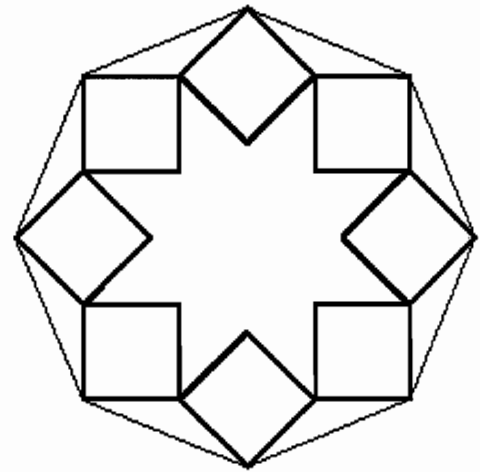
S5

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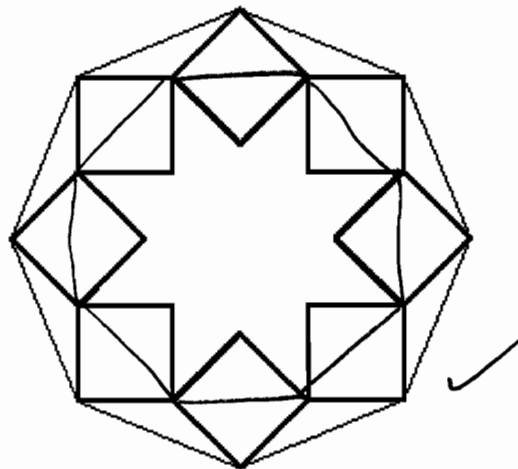
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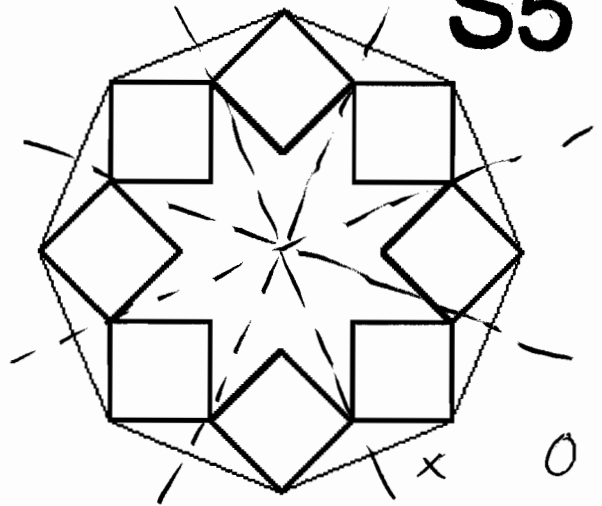
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How many sides does the star have? 16 ✓

1

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

S5



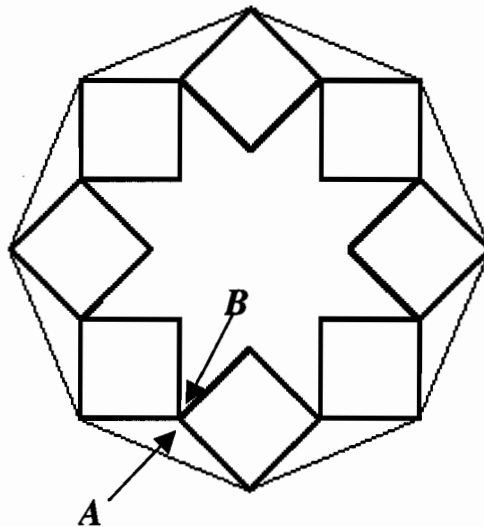
How many lines of symmetry does the star have? 4 ✓ ft 1

What is the angle between each line of symmetry and the next? 45° ✓ ft 1

Explain how you know.

because a circle is 360° so just divide 360° by 8 ✓ ft 2

4.



Angle A is 135°. Calculate the measure of angle B. 35° x 0

Show your work.

360 - 325 = 35 A 0

Octagon Tile

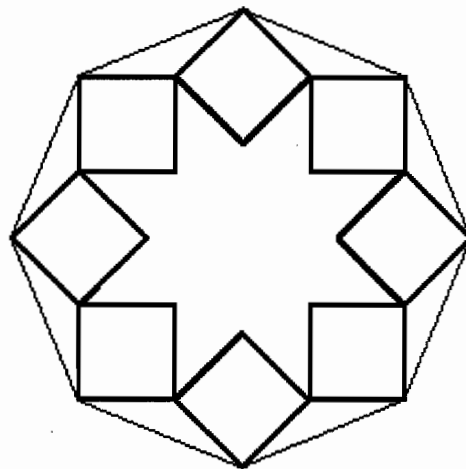
S6

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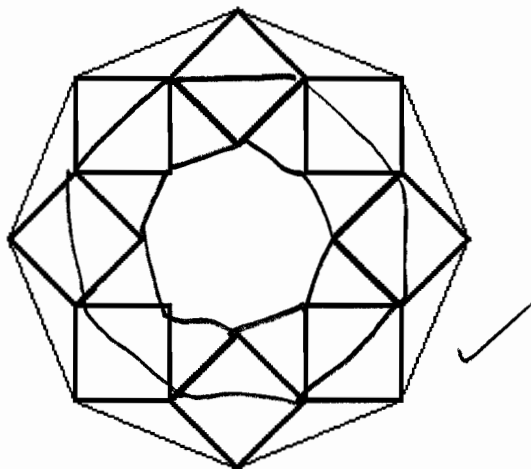
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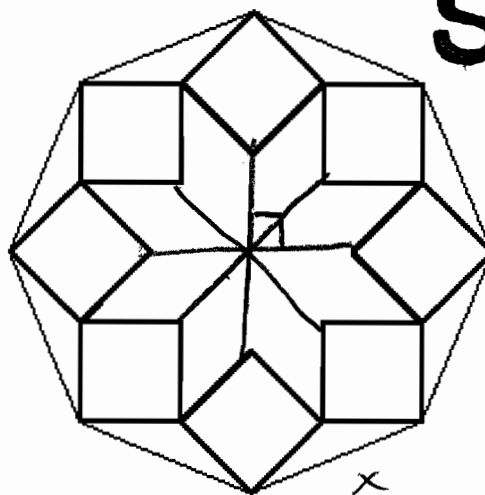
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How many sides does the star have? 16 ✓

1

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

S6



How many lines of symmetry does the star have?

4 ✓

f+1

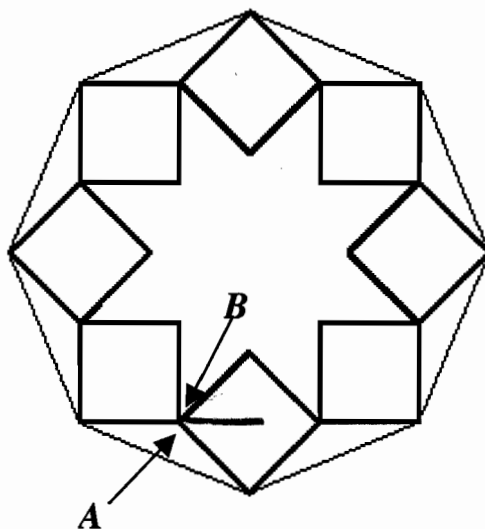
What is the angle between each line of symmetry and the next?
Explain how you know.

45° ✓

f+1

Because the angle of 1st and 3rd line of symmetry is 90° ^ ✓ f(1)

4.



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

30° x

0

It is less than 90° x

0



Octagon Tile

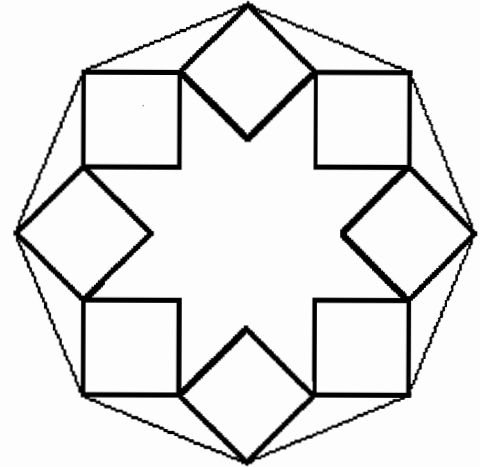
S7

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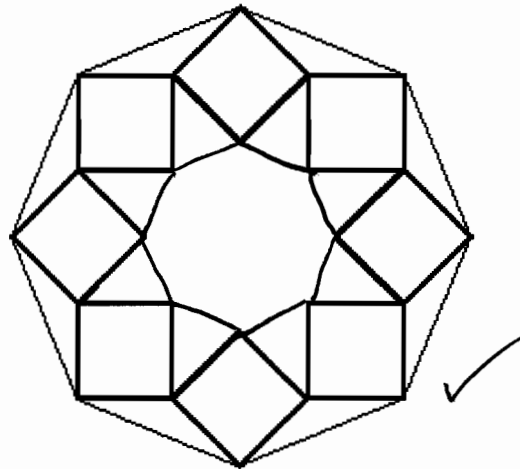
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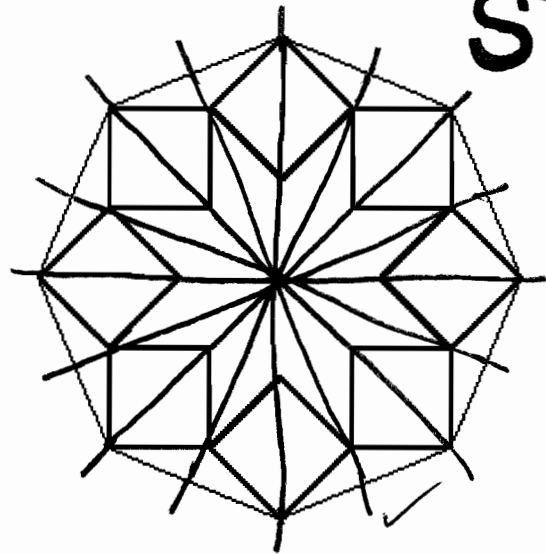
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How many sides does the star have? 16 ✓

1

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

S7



How many lines of symmetry does the star have?

16 x

0

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

20° x

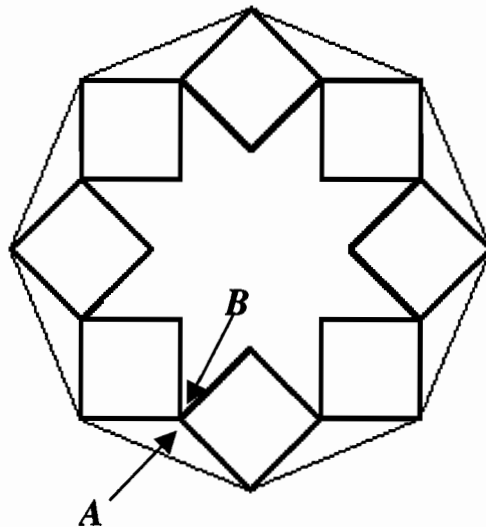
0

$$320 \div 16 = 20^\circ \quad \times$$

x Full Circle # of lines

2ft

4.



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

5° x

0

Show your work.

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

BOD

1



Octagon Tile

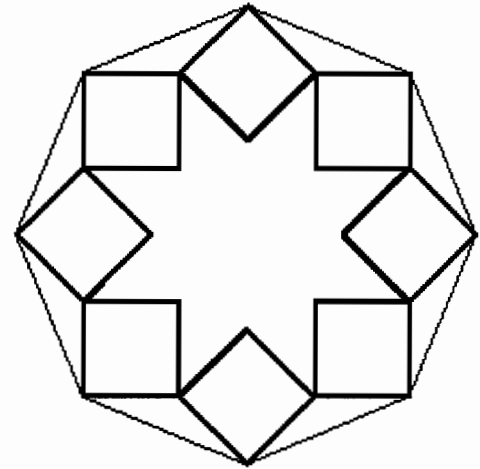
S8

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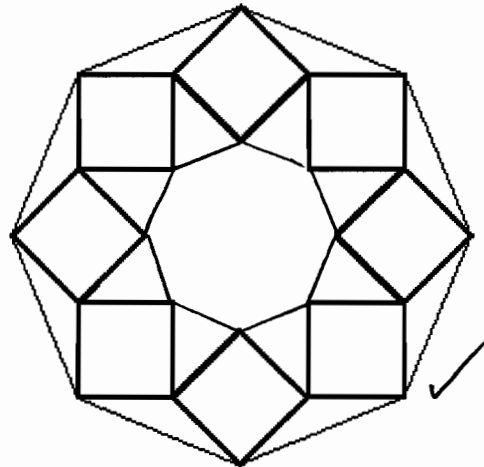
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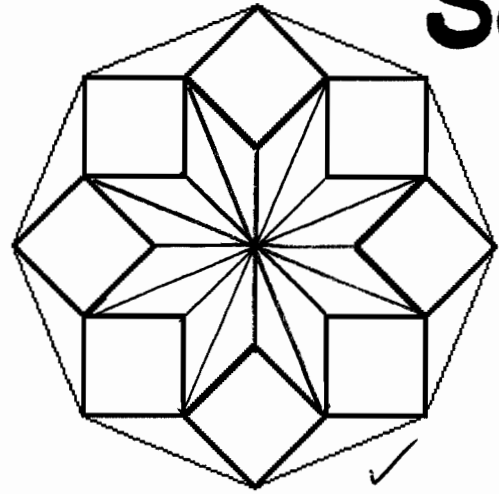
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How many sides does the star have? 16 ✓

1

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S8



How many lines of symmetry does the star have?

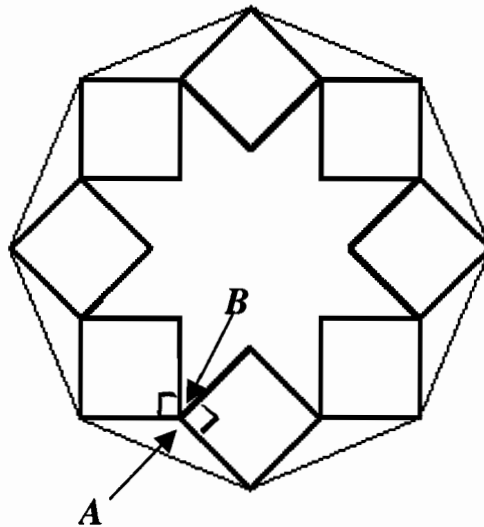
8 ✓

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

45° x

Because I divided 360 by 8^x (1)ft
because all of the angles should equal up to 360°

4.



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

45° ✓

2 · 90 + 135 = 315 360 - ✓

Octagon Tile

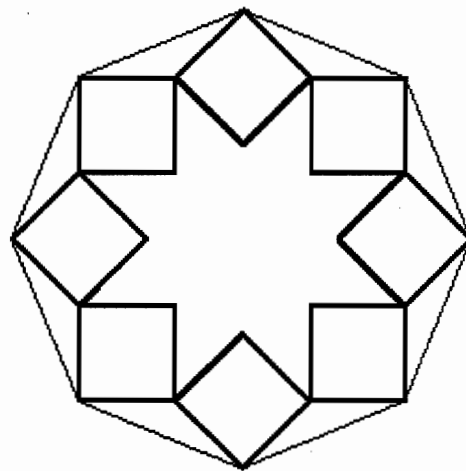
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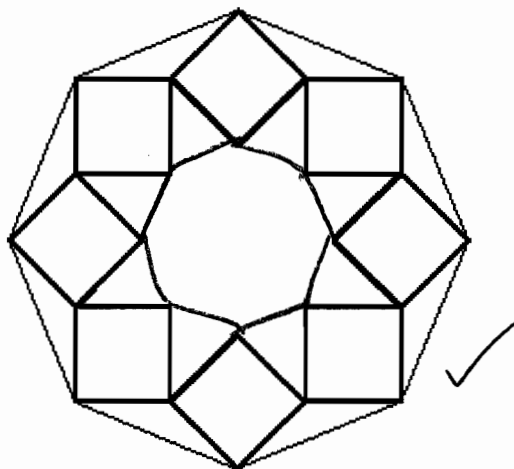
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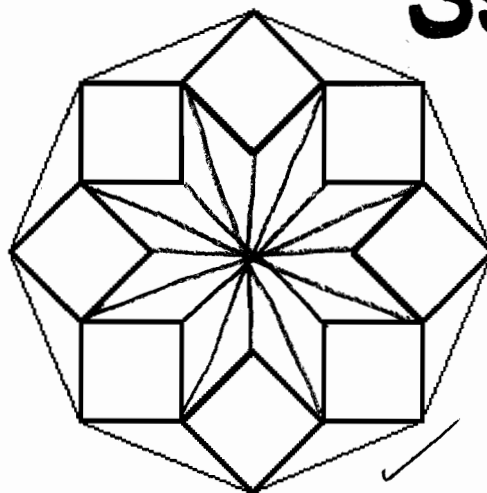
2

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

How many sides does the star have? 16 sides ✓

1

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



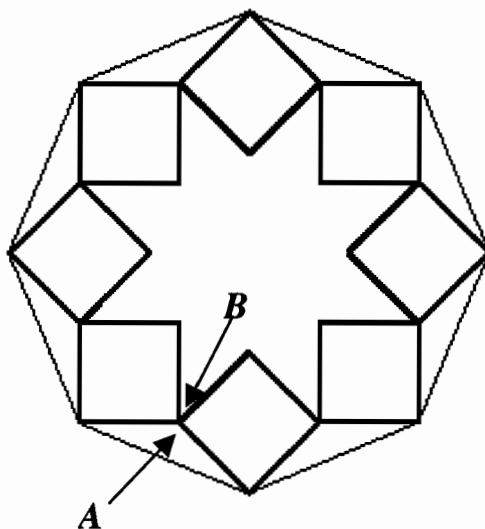
How many lines of symmetry does the star have? 8 ✓

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

Explain how you know.

because every triangle is $90^\circ + 90 \div 3 = 30$. ×

4.



Angle A is 135° . Calculate the measure of angle B. 40° ×

Show your work.

I measured it ×

Octagon Tile

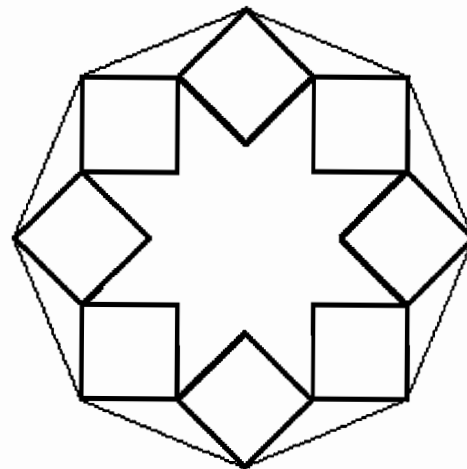
S10

This problem gives you the chance to:

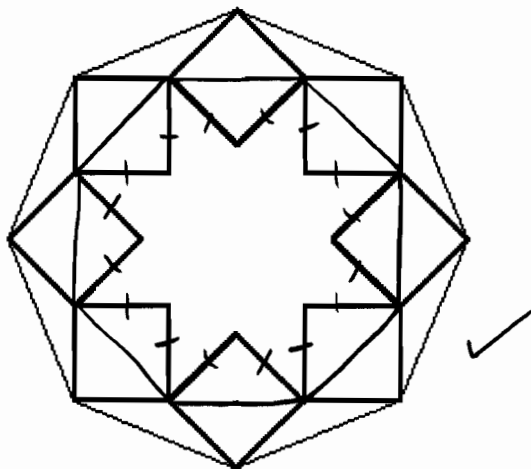
- work with patterns and shape

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.



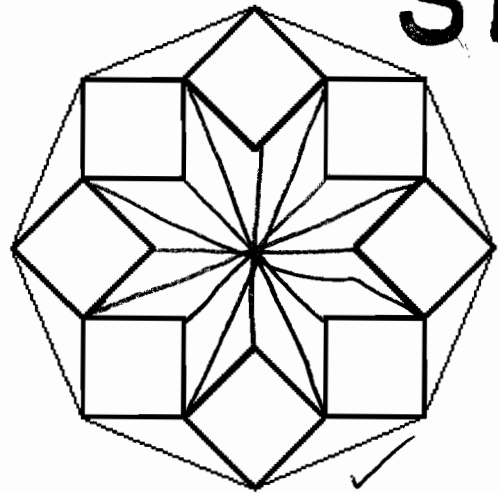
2

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

How many sides does the star have? 16 ✓

1

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



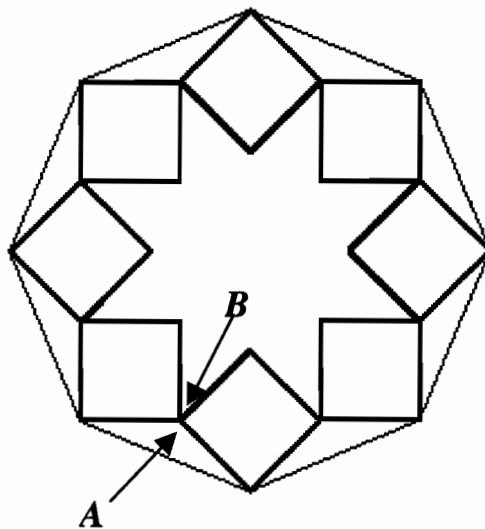
How many lines of symmetry does the star have? 8 ✓

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

22.5° ✓

$360^\circ \div 16$ (lines from center) = 22.5° ✓

4.



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

45° ✓

$135 + 90 + 90 = 315$ ✓
45