

Mathematics

Delprov E

ÅRSKURS

6

Elevens namn och klass/grupp

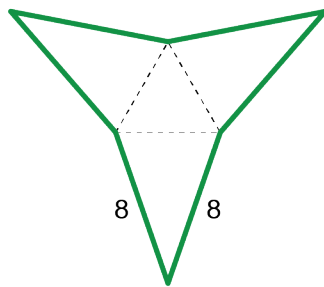
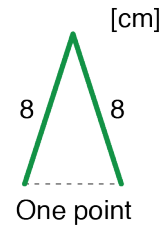
Question 36

(5/5/5)

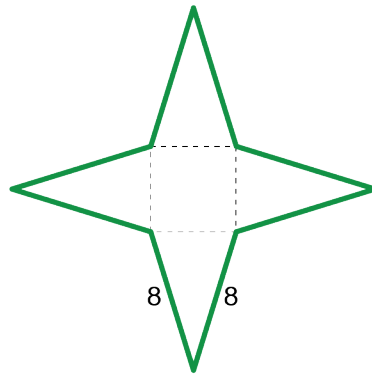
Part 1

The figures show stars with different numbers of points.
Each point has two sides of equal length.

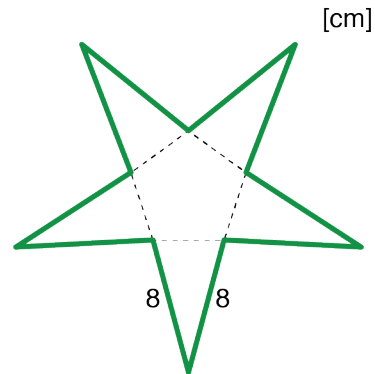
The figures are not drawn to scale.



Star with 3 points



Star with 4 points



Star with 5 points

- a) Calculate the circumference (the length of the green line) of the star with three points.
Show how you work this out.

- b) Calculate the circumference of the star with 5 points.
Show how you work this out.

- c) The star pattern continues in the same way.
Calculate the circumference of a star with 20 points.
Show how you work this out.
- d) Use words, an expression or a formula to describe how you calculate the circumference of a star in the pattern with x number of points.
- e) How many points are there on a star with a circumference of 880 cm?
Show how you work this out.

Part 2

Here you can see another pattern. The number of points increases with every new figure. Each point has two sides of equal length. They are the same length in all of the figures. There is a black side at the bottom. It is the same length in all of the figures.

The figures are not drawn to scale.

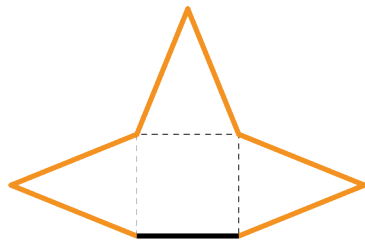


Figure with 3 points

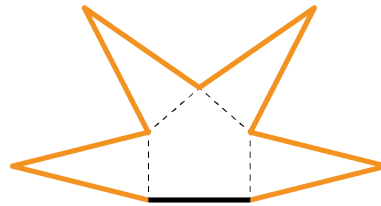


Figure with 4 points

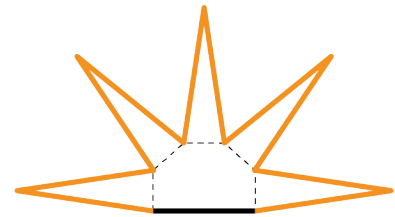


Figure with 5 points

The table shows how the circumference increases with the number of points in the pattern.

Number of points:	3	4	5	6	7
The figure's circumference in cm:	41	53	65	77	89

- a) What is the length of the black side?
Show how you work this out.

- b) Use an expression or a formula to describe how you calculate the circumference of a figure in the pattern with x number of points.
- c) How many points are there on a figure with a circumference of 569 cm?
Show how you work this out.

When assessing your work the teacher will take the following into account:

- which methods you choose and how you use them
- how well you show your solution and do your calculations
- how well you describe your reasoning for your results.

