Mathematics

Ratio and proportion in geometry I Lesson 5 of 8
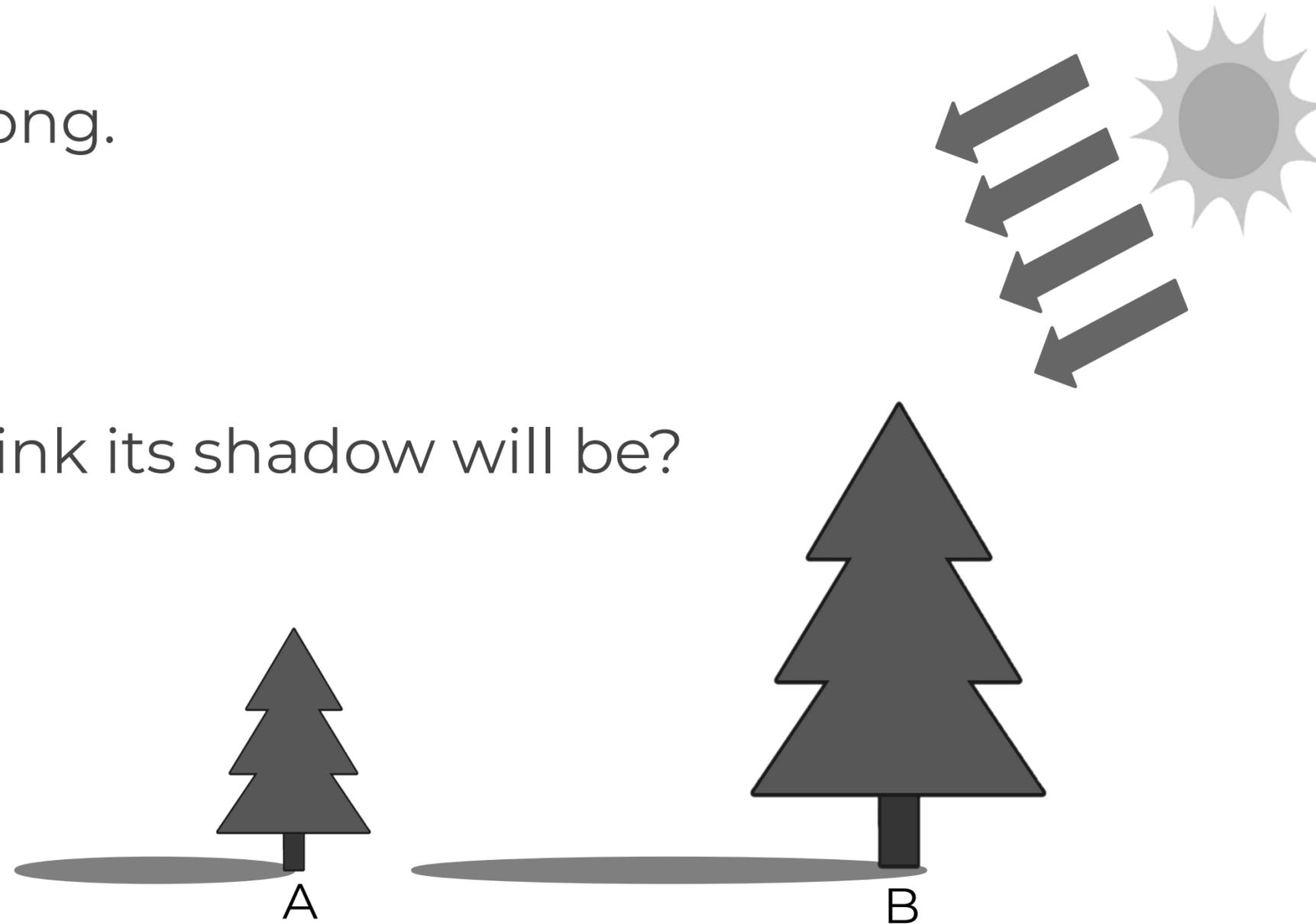
Miss Kidd-Rossiter

Try this

Tree A is 1.8m tall.

Its shadow is 2.3m long.

Tree B is 7.2m tall.

How long do you think its shadow will be?

Connect

Antoni

The triangle with side lengths 6 cm, 8 cm and 10 cm is an enlargement of the triangle with side lengths 4 cm, 5 cm and 3 cm.

Cala

The triangle with side lengths 4 cm, 5 cm and 6 cm is an enlargement of the triangle with side lengths 8 cm, 10 cm and 12 cm.

Binh

The triangle with side lengths 8 cm, 8 cm and 6 cm is an enlargement of the triangle with side lengths 5 cm, 5 cm and 3 cm.
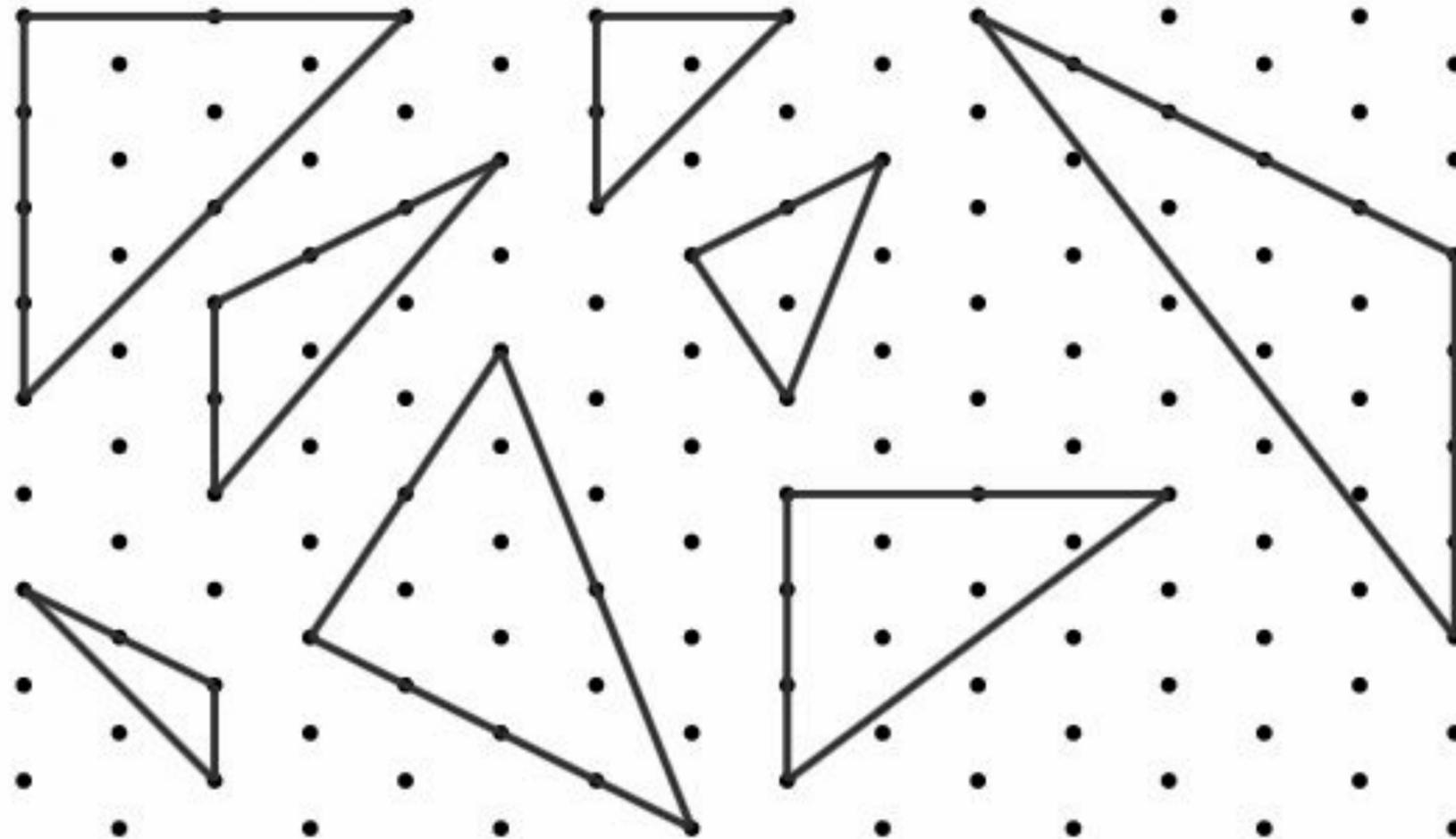
Who do you agree with?

Why?

Independent task

1. Which of these triangles are enlargements of each other?

Work out the constant of proportionality between any pair of enlarged triangles.

Independent task

2. Using the points marked on the grid

a. Write the coordinates of the points A to G

b. Find the following ratios between the lengths stated

    i) AB:BC   ii) AD:DE   iii) AB:AF

    iv) BC:DE   v) AC:AG   vi) AB:BF

c. Find the constant of proportionality between the following pairs of triangles

    i) ABC and ADE ii) ABC and AFG

    iii) ADE and AFG
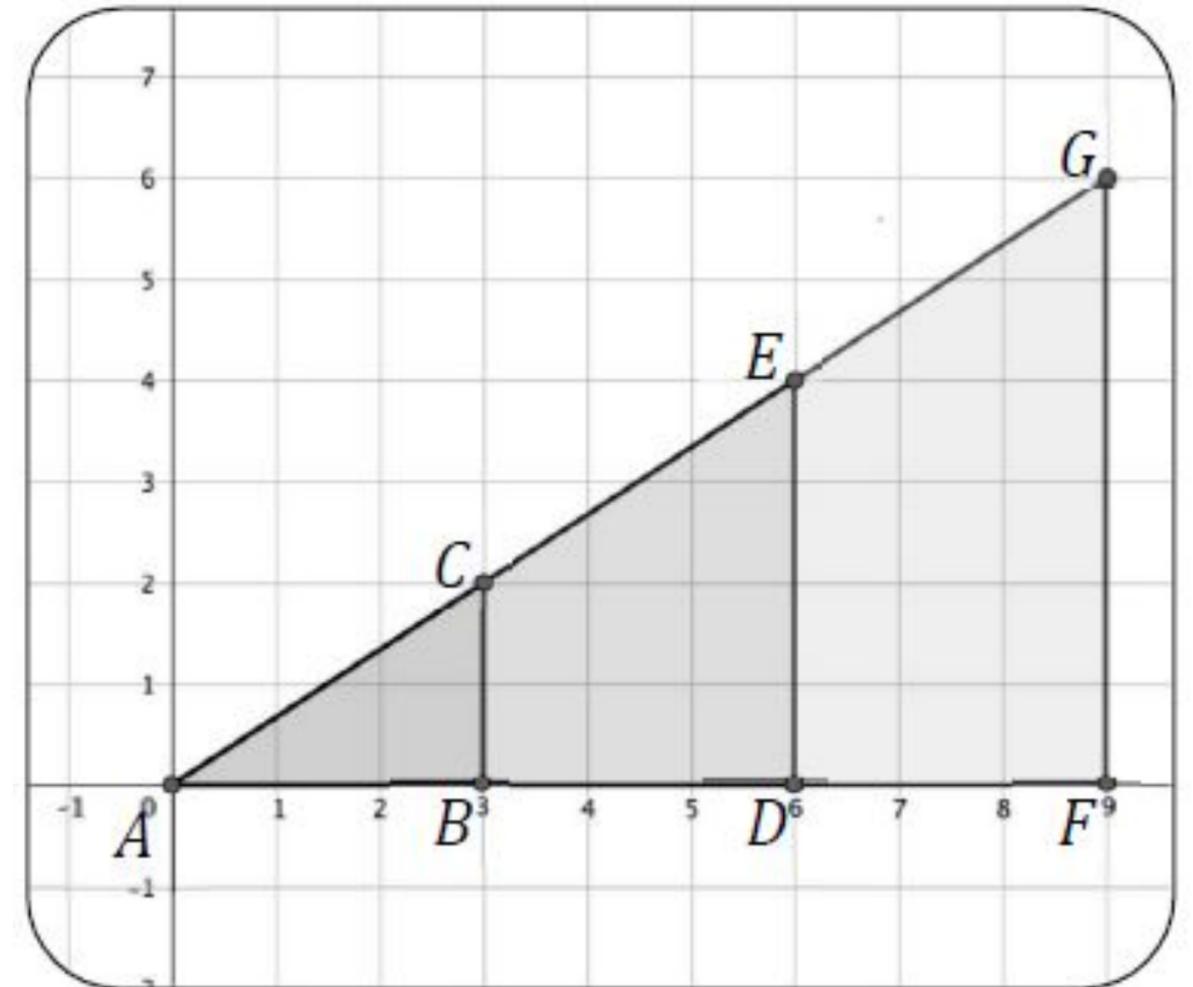
Explore

Zaki is considering the enlargement of triangles.

He makes the statement below.

Is his statement always true, sometimes true or never true?

Zaki

When I make the lengths of the sides of a triangle bigger by adding 5 cm to each one, the new triangle is an enlargement of the original triangle.