

Overview

To Find **Scale Factor** = $\frac{\text{Scale Length}}{\text{Original Length}}$

Given scale factor As a decimal or fraction

Find the scale dimensions
original x scale factor

Find the original dimensions
scale ÷ scale factor

Scale Diagrams
For an enlargement or reduction, the scale factor is: $\frac{\text{Length on scale diagram}}{\text{Length on original diagram}}$
An enlargement has a scale factor > 1. A reduction has a scale factor < 1.

Similar Triangles
Similarity Statements $\Delta PQR \sim \Delta STU$


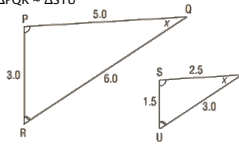
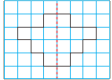
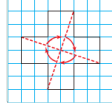
When we check whether two triangles are similar:

- their corresponding angles must be equal:
 $\angle P = \angle S$ and $\angle Q = \angle T$ and $\angle R = \angle U$
- or
- their corresponding sides must be proportional:
 $\frac{PQ}{ST} = \frac{QR}{TU} = \frac{PR}{SU}$

Any of the ratios $\frac{PQ}{ST}$, $\frac{QR}{TU}$, and $\frac{PR}{SU}$ is the scale factor.

Line Symmetry
A shape has line symmetry when a line divides the shape into two congruent parts so that one part is the image of the other part after a reflection in the line of symmetry.

Rotational Symmetry
A shape has rotational symmetry when it coincides with itself after a rotation of less than 360° about its centre. The number of times the shape coincides with itself is the order of rotation.
The angle of rotation symmetry = $\frac{360^\circ}{\text{the order of rotation}}$

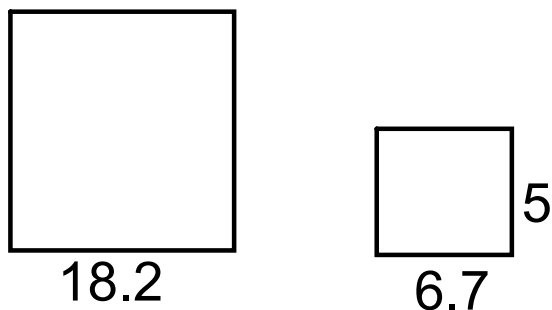





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1) The scale shown on a map of Canada is 1 cm = 120 km. On the map the distance between Vancouver and Calgary is 5.5 cm. How many kilometers apart are Vancouver and Calgary. (Show all work)

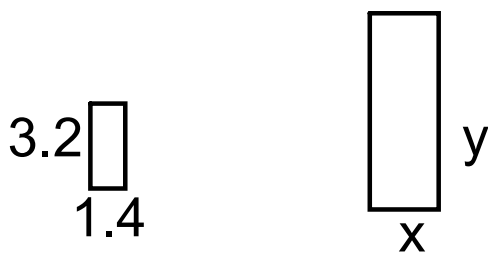
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What is the scale factor of the following:



Apr 22-7:56 AM

If the scale factor is 1.5 what is the dimension of the enlarged shape? (Show all work)



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i) State the similarity statement (line up angles)

ii) State the ratios

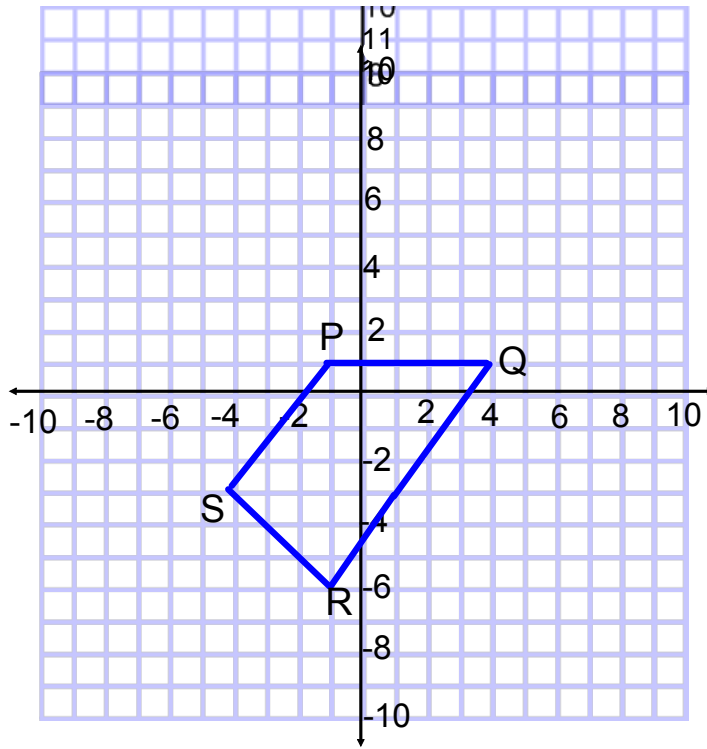
iii) Fill in the ratios

iv) Solve for x

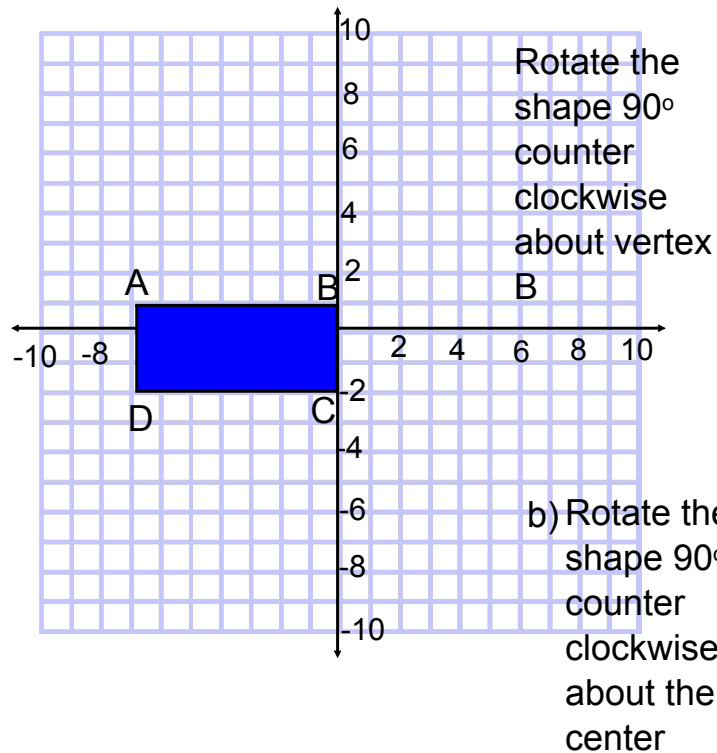
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Apr 22-8:04 AM

Use a line through 2 on the y-axis as a line of symmetry to complete the shape by drawing its other half. Write the coordinates of the new shape formed by P'Q'R'S' and its image.



Apr 22-8:06 AM



Apr 22-8:19 AM



How many lines of symmetry?

What is the order of rotation?

What is the angle of rotation?

Apr 22-8:20 AM

Homework

Test Tomorrow



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Questions

1a ($l = 5\text{cm}$, $h = 3\text{cm}$)

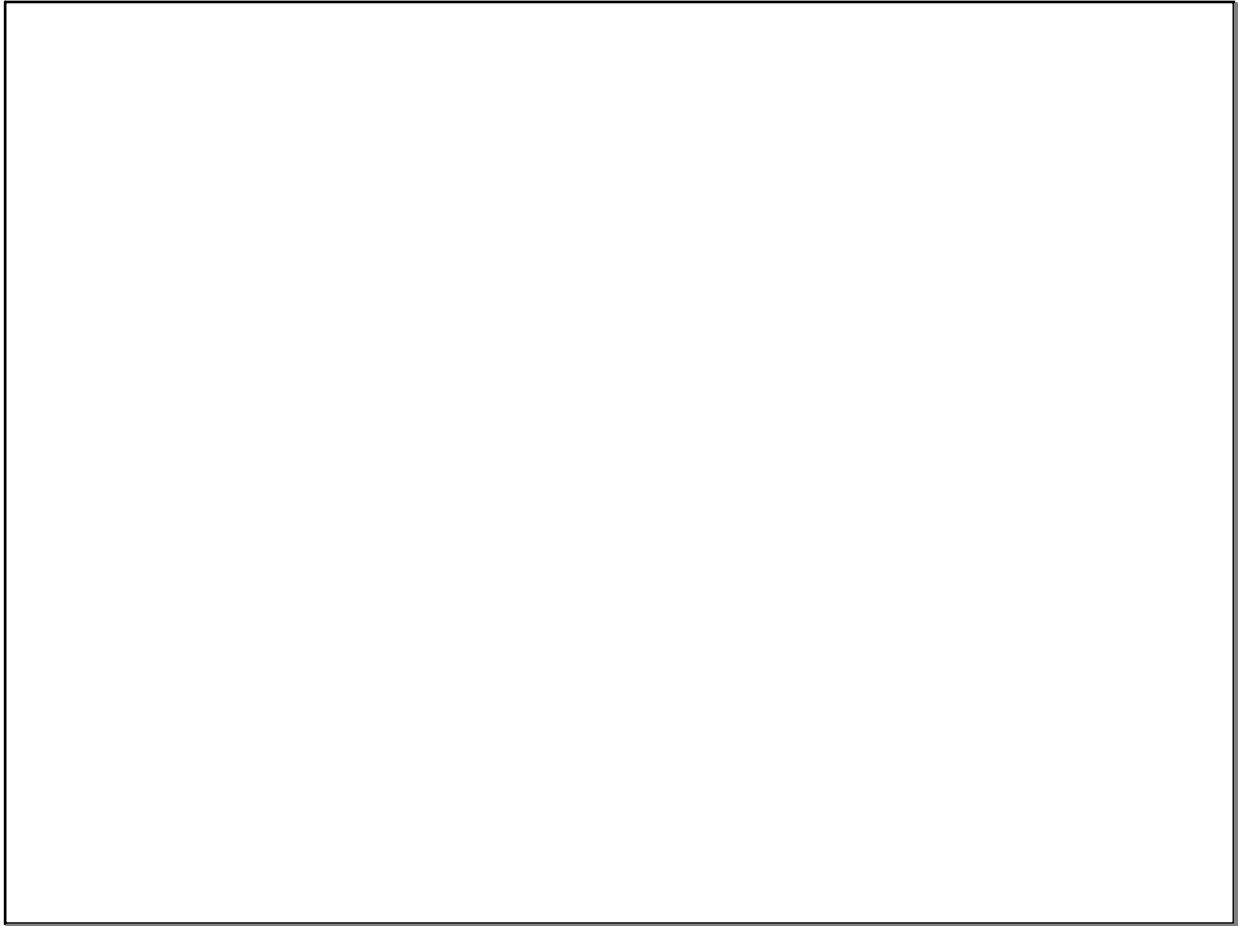
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Mar 23-10:14 PM



May 3-10:02 AM