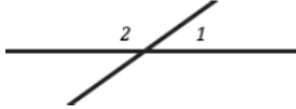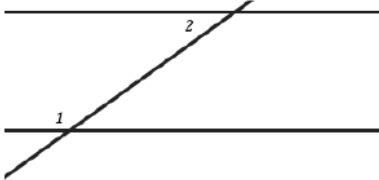Questions on 6.2 HW? We are having a quiz today on dilating triangles using the method we used last class...look it over!

SM2 - Module 6 SE.pdf - Adobe Acrobat Reader DC
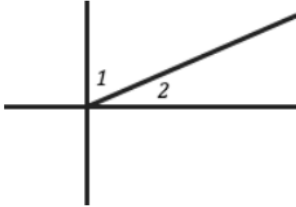
File   Edit   View   Window   Help

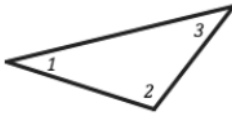Home   Tools   SM2 - Module 6 SE... ×

12   / 61   125%

_____5.   _D_ 6.

(add up to 90°)

a. Alternate Interior Angles   b. Vertical Angles   c. Complementary Angles

d. Triangle Sum Theorem   e. Linear Pair   f. Same Side Interior Angles

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8.50 x 11.00 in

Feb 24-11:42 AM

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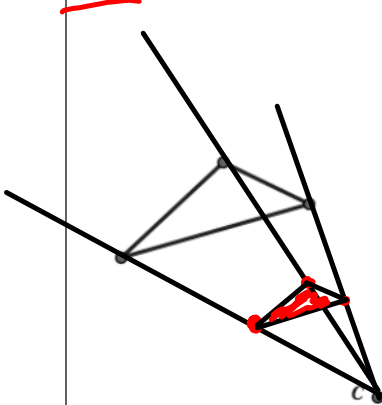
Home   Tools   SM2 - Module 6 SE...   ×

13 / 61   125%   ▼

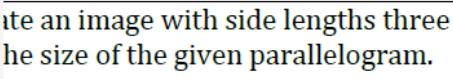ite an image with side lengths twice
e of the given triangle.

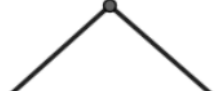8. Create an image with side lengths half the
size of the given triangle.

ite an image with side lengths three
he size of the given parallelogram.

10. Create an image with side length one
fourth the size of the given pentagon.

8.50 x 11.00 in

12.

E'　E

D'

C'　　　D

C

center of dilation

ratio: 3

D

C

pre-image

B

D'

E

E'

B'　　　F'

image

14.

C

rotated 90°

17.

18.

Feb 24-11:59 AM

6.3 Similar Triangles and Other Figures
A Solidify Understanding Task

Two figures are said to be *congruent* if the second can be obtained from the first by a sequence of rotations, reflections, and translations. In Mathematics I we found that we only needed three pieces of information to guarantee that two triangles were congruent: SSS, ASA or SAS.

What about AAA? Are two triangles congruent if all three pairs of corresponding angles are congruent? In this task we will consider what is true about such triangles.

Part 1

Congruent figures are also similar.

Definition of Similarity: Two figures are *similar* if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations.

Mason and Mia are testing out conjectures about similar polygons. Here is a list of their conjectures.
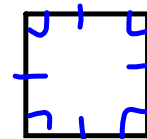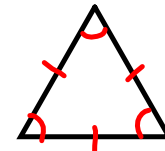
Conjecture 1: *All rectangles are similar.* No

Conjecture 2: *All equilateral triangles are similar.* Yes
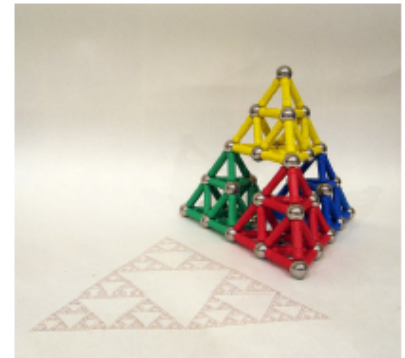
Conjecture 3: *All isosceles triangles are similar.* No

Conjecture 4: *All rhombuses are similar.* No

Conjecture 5: *All squares are similar.* Yes

1. Which of these conjectures do you think are true? Why?

2 & 5, because equilateral triangles & squares are both regular polygons, meaning they have congruent angles & side lengths.

While the definition of similarity given at the beginning of the task works for <u>all</u> similar figures, an alternative definition of similarity can be given for polygons: Two polygons are similar if all corresponding angles are congruent and all corresponding pairs of sides are proportional.
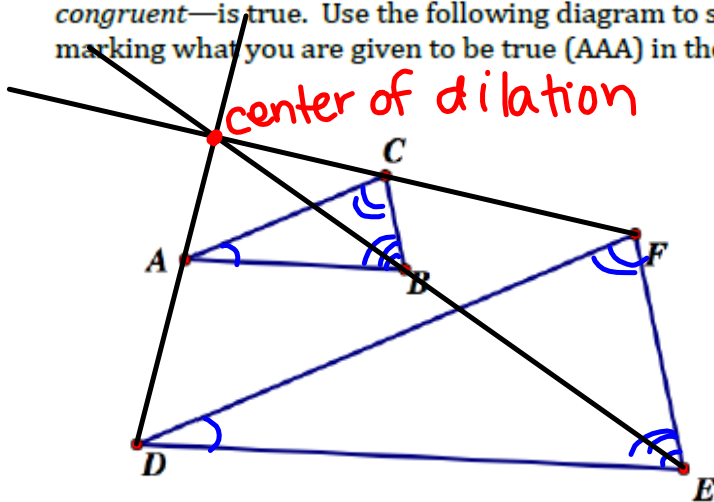
Part 2 (AAA Similarity)

From our work above with rectangles it is obvious that knowing that all rectangles have four right angles (an example of AAAA for quadrilaterals) is not enough to claim that all rectangles are similar. What about triangles? In general, are two triangles similar if all three pairs of corresponding angles are congruent?

8.   Decide if you think the following conjecture is true.

    Conjecture: *Two triangles are similar if their corresponding angles are congruent.*

9. Explain why you think the conjecture—*two triangles are similar if their corresponding angles are congruent*—is true. Use the following diagram to support your reasoning, Remember to start by marking what you are given to be true (AAA) in the diagram.

center of dilation

△ ABC ~ △ DEF
because they are
dilations of each other.

Hint: *If you translate A to D, where do points B and C end up?*

10. Mia thinks the following conjecture is true. She calls it *"AA Similarity for Triangles."* What do you think? Is it true? Why?

Conjecture: *Two triangles are similar if they have two pair of corresponding congruent angles.*

Feb 15-1:34 PM

Homework

Finish 6.3 "Ready, Set, Go"

Mar 28-9:36 AM