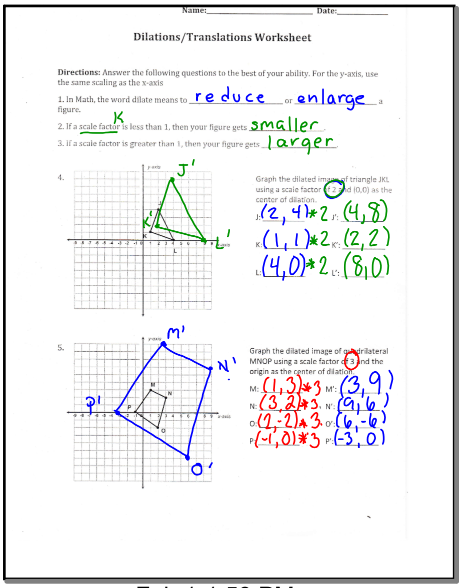
February 4, 2019, Monday

On the internet research "geometric dilation on a grid" and copy an example.

State 2 observations about your dilation.

Jan 24-9:32 AM


Dilations/Translations Worksheet

Directions: Answer the following questions to the best of your ability. For the y-axis, use the same scaling as the x-axis

1. In Math, the word dilate means to reduce or enlarge a figure.

2. If a scale factor (k) is less than 1, then your figure gets smaller

3. If a scale factor is greater than 1, then your figure gets larger

4. Graph the dilated image of triangle JKL using a scale factor of 2 and (0,0) as the center of dilation.

J: (2, 4) * 2 J': (4, 8)

K: (1, 1) * 2 K': (2, 2)

L: (4, 0) * 2 L': (8, 0)

5. Graph the dilated image of quadrilateral MNOP using a scale factor of 3 and the origin as the center of dilation.

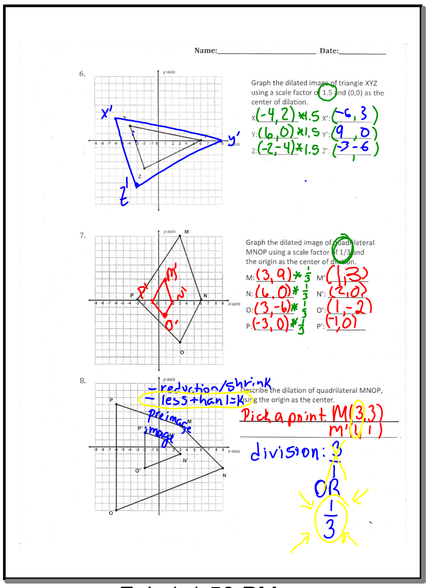
M: (1, 3) * 3 M': (3, 9)

N: (3, 2) * 3 N': (9, 6)

O: (2, -2) * 3 O': (6, -6)

P: (-1, 0) * 3 P': (-3, 0)

Feb 1-1:58 PM


6. Graph the dilated image of triangle XYZ using a scale factor of 1.5 and (0,0) as the center of dilation.

X: (-4, 2) * 1.5 X': (-6, 3)

Y: (6, 0) * 1.5 Y': (9, 0)

Z: (-2, -4) * 1.5 Z': (-3, -6)

7. Graph the dilated image of quadrilateral MNOP using a scale factor of 1/3 and the origin as the center of dilation.

M: (3, 9) * 1/3 M': (1, 3)

N: (6, 0) * 1/3 N': (2, 0)

O: (3, -6) * 1/3 O': (1, -2)

P: (-3, 0) * 1/3 P': (-1, 0)

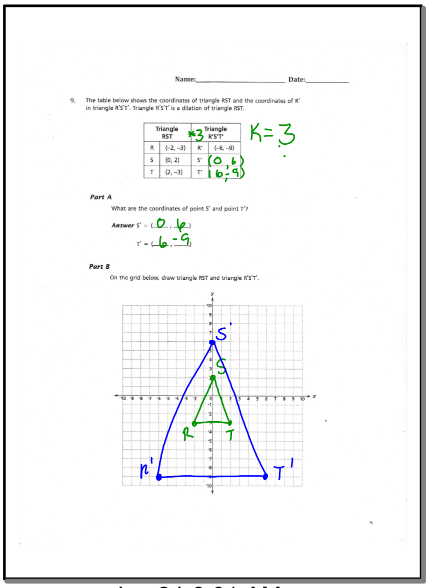
8. Describe the dilation of quadrilateral MNOP, using the origin as the center.

- reduction/shrink
- less than 1 = K

Pick a point M(3, 3) M'(1, 1)

division: 3 OR 1/3

Feb 1-1:58 PM


9. The table below shows the coordinates of triangle RST and the coordinates of R' in triangle R'S'T'. Triangle R'S'T' is a dilation of triangle RST.

Triangle RST		Triangle R'S'T'	
R	(-2, -3)	R'	(-6, -9)
S	(0, 2)	S'	(0, 6)
T	(2, -3)	T'	(6, -9)

K = 3

Part A

What are the coordinates of point S' and point T'?

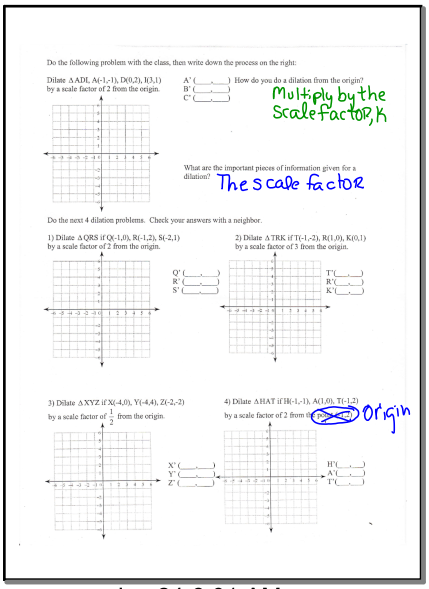
Answer S' = (0, 6)

T' = (6, -9)

Part B

On the grid below, draw triangle RST and triangle R'S'T'.

Jan 24-8:01 AM


Do the following problem with the class, then write down the process on the right:

Dilate △ADI, A(-1,-1), D(0,2), I(3,1) by a scale factor of 2 from the origin.

How do you do a dilation from the origin? Multiply by the scale factor, K

What are the important pieces of information given for a dilation? The scale factor

Do the next 4 dilation problems. Check your answers with a neighbor.

1) Dilate △QRS if Q(-1,0), R(-1,2), S(-2,1) by a scale factor of 2 from the origin.

2) Dilate △TRK if T(-1,-2), R(1,0), K(0,1) by a scale factor of 3 from the origin.

3) Dilate △XYZ if X(-4,0), Y(-4,4), Z(-2,-2) by a scale factor of $\frac{1}{2}$ from the origin.

4) Dilate △HAT if H(-1,-1), A(1,0), T(-1,2) by a scale factor of 2 from the origin

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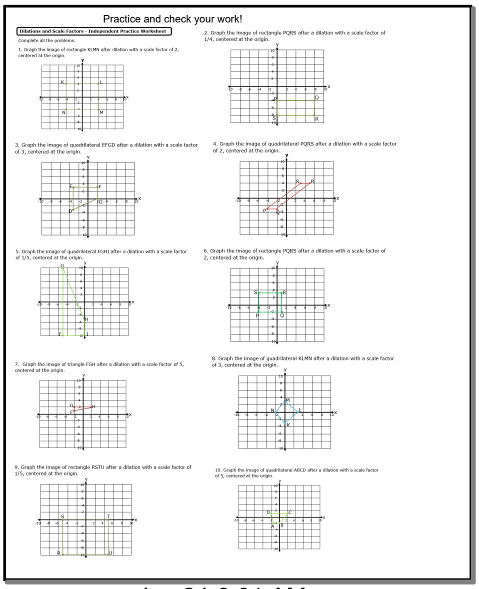
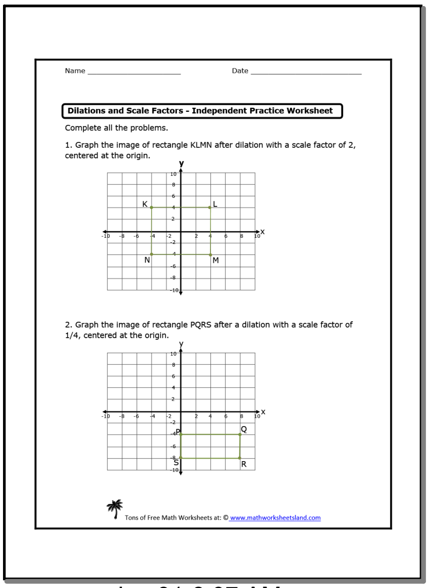

Practice and check your work!

Jan 24-8:01 AM


Name ________________ Date ________________

Dilations and Scale Factors - Independent Practice Worksheet

Complete all the problems.

1. Graph the image of rectangle KLMN after dilation with a scale factor of 2, centered at the origin.

2. Graph the image of rectangle PQRS after a dilation with a scale factor of 1/4, centered at the origin.

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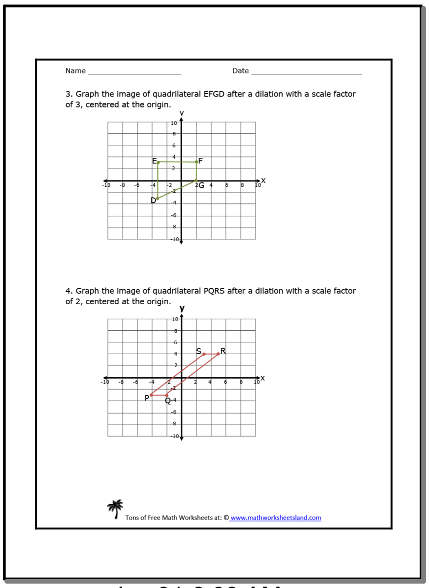
Jan 31-8:07 AM


Name ________________ Date ________________

3. Graph the image of quadrilateral EFGD after a dilation with a scale factor of 3, centered at the origin.

4. Graph the image of quadrilateral PQRS after a dilation with a scale factor of 2, centered at the origin.

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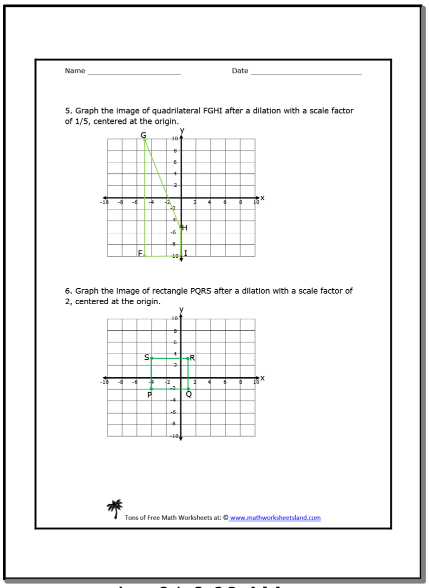
Name ________________ Date ________________

5. Graph the image of quadrilateral FGHI after a dilation with a scale factor of 1/5, centered at the origin.

6. Graph the image of rectangle PQRS after a dilation with a scale factor of 2, centered at the origin.

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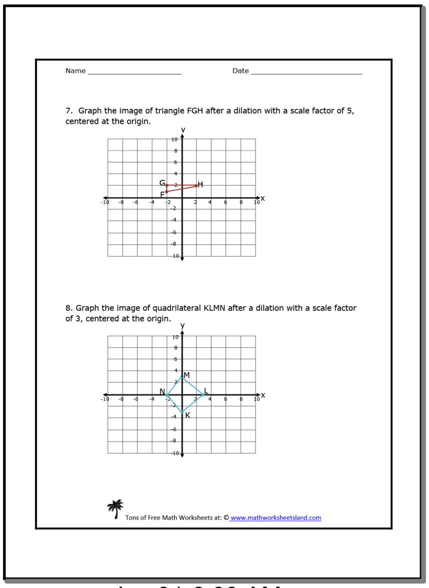
Jan 31-8:08 AM


Name ________________ Date ________________

7. Graph the image of triangle FGH after a dilation with a scale factor of 5, centered at the origin.

8. Graph the image of quadrilateral KLMN after a dilation with a scale factor of 3, centered at the origin.

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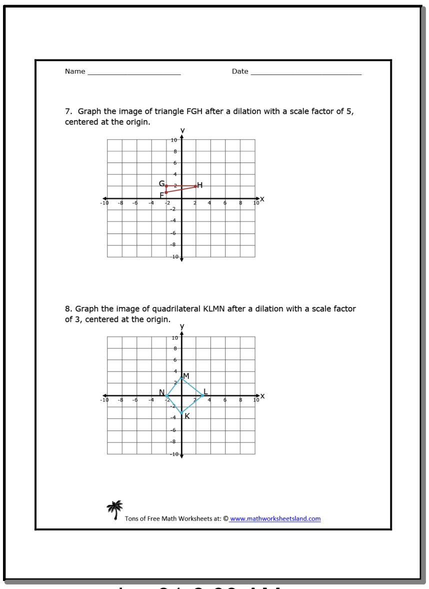
Jan 31-8:09 AM


Name ________________ Date ________________

7. Graph the image of triangle FGH after a dilation with a scale factor of 5, centered at the origin.

8. Graph the image of quadrilateral KLMN after a dilation with a scale factor of 3, centered at the origin.

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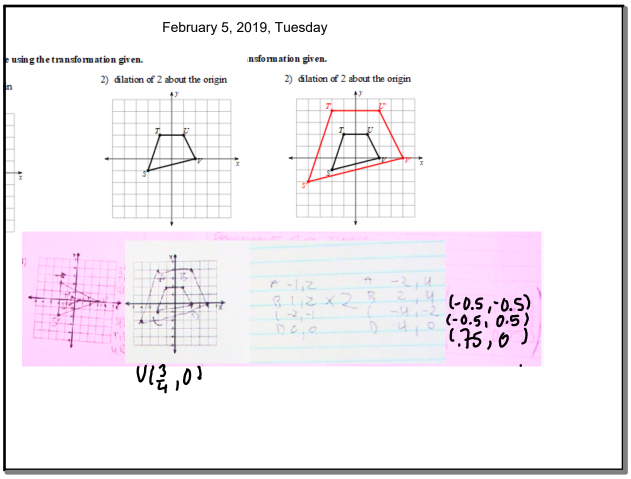
Jan 31-8:09 AM



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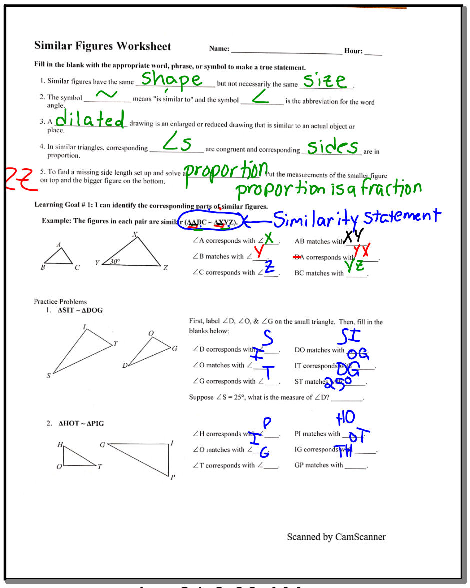

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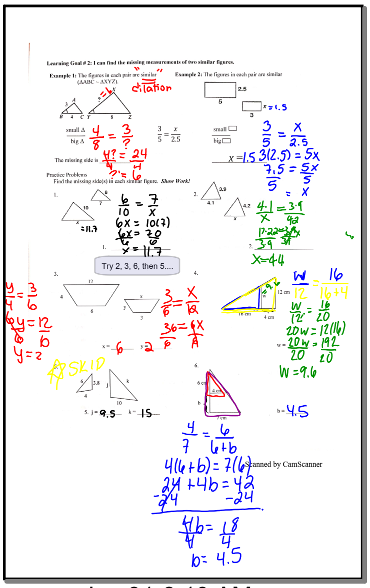

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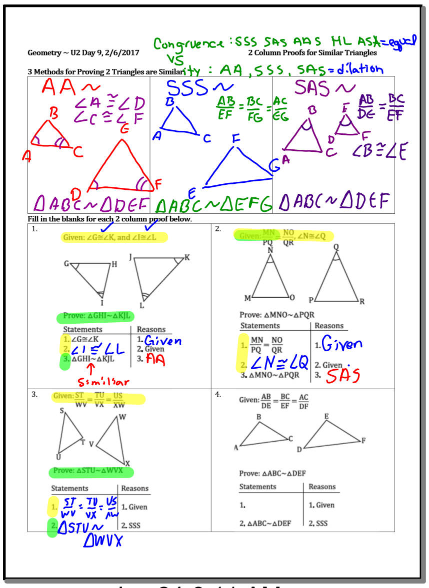

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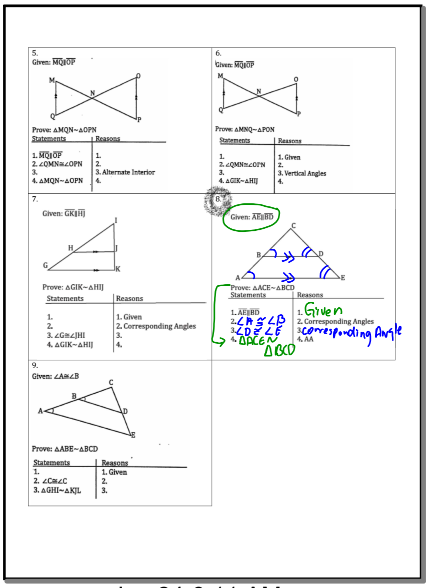

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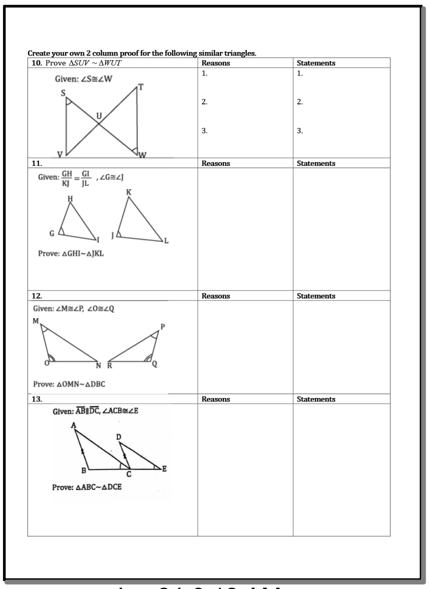

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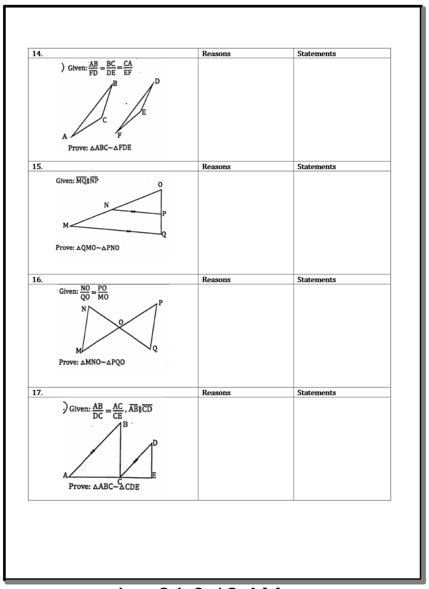

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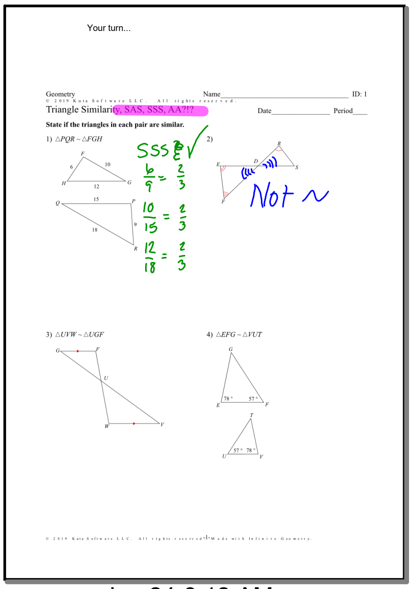

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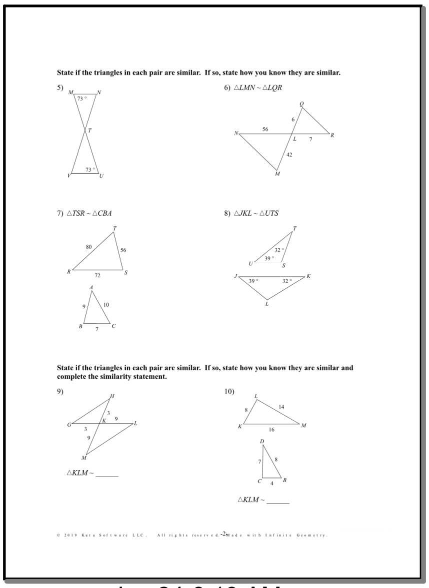

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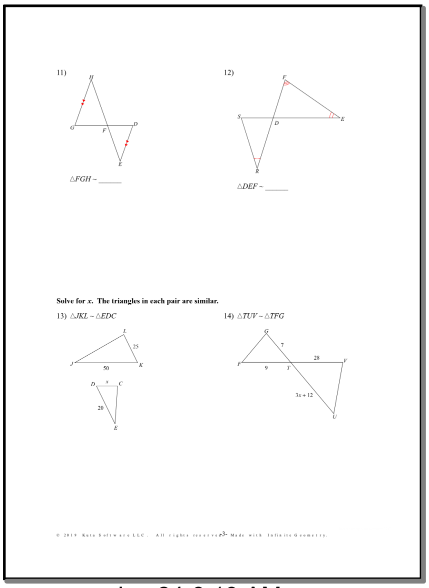

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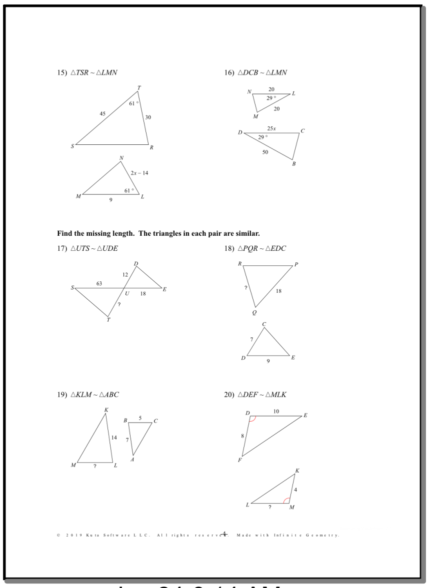
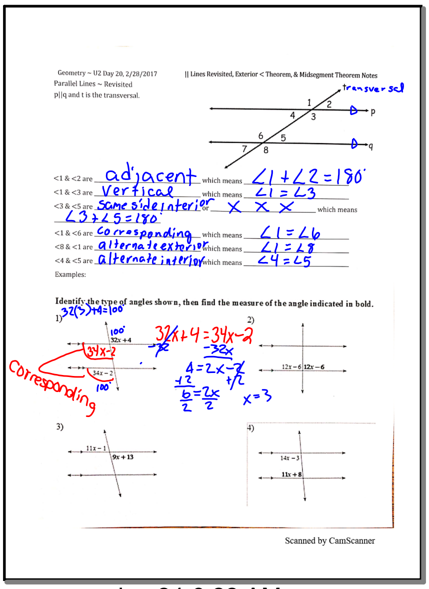


Jan 24-8:14 AM

February 6, 2019, Wednesday

What are the 3 ways to prove triangle similarity?
Write an example of a set of triangles using one of the ways...

Jan 24-8:20 AM



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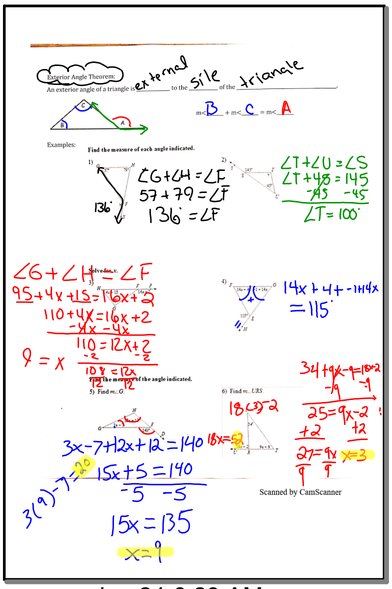

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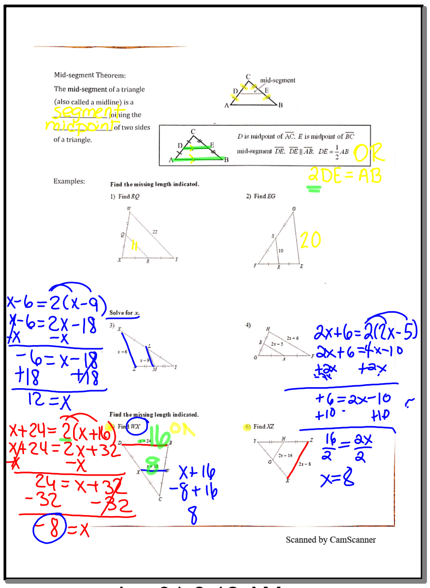

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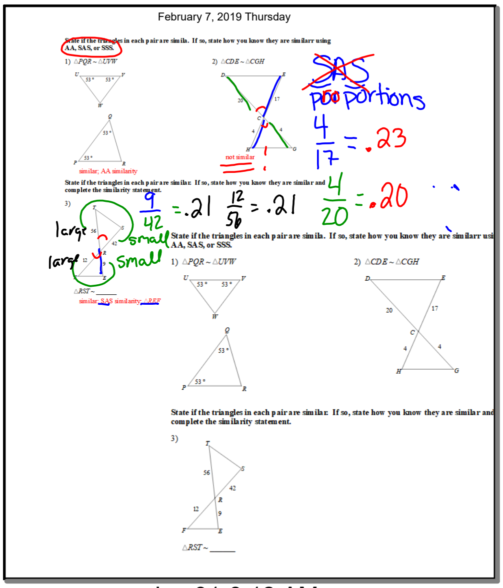

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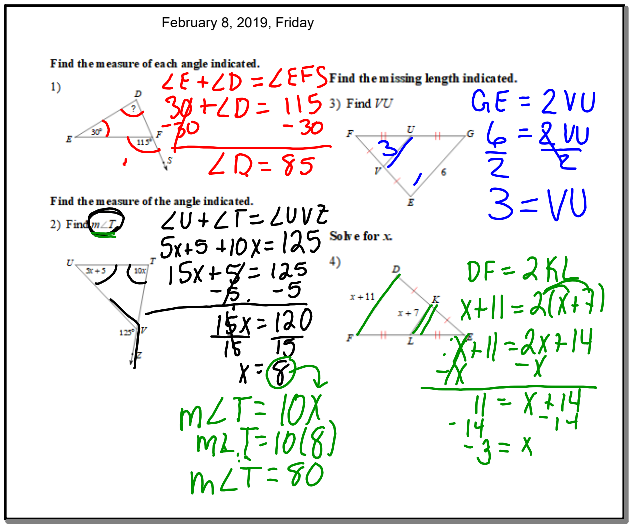
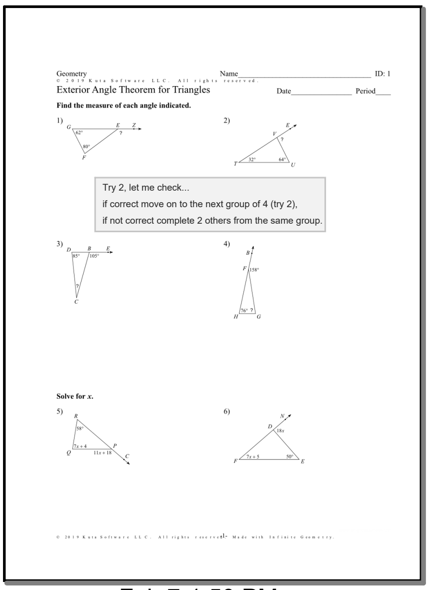
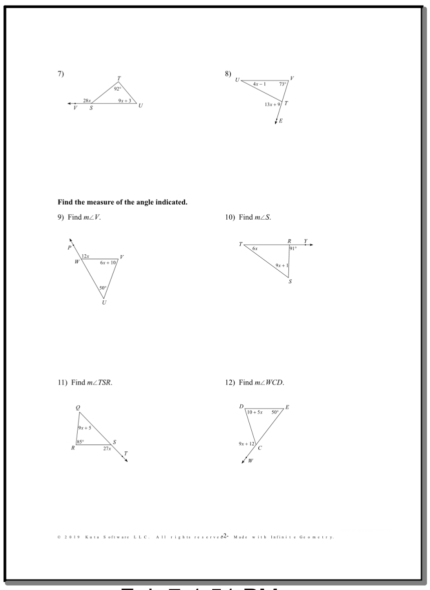


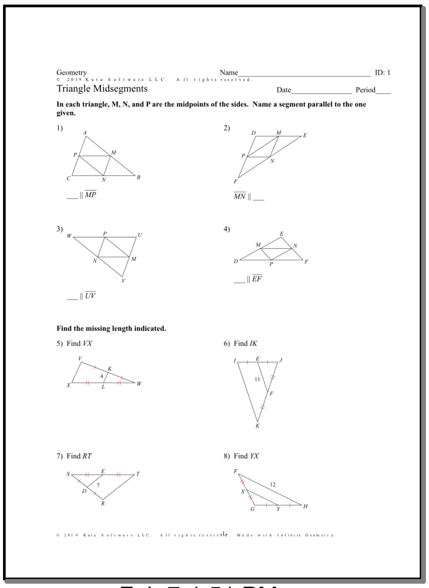
Feb 7-1:48 PM



Feb 7-1:50 PM



Feb 7-1:51 PM



Geometry Name________________ ID: 1

Triangle Midsegments Date________ Period____

In each triangle, M, N, and P are the midpoints of the sides. Name a segment parallel to the one given.

1) ___ ∥ $\overline{MP}$

2) $\overline{MN}$ ∥ ___

3) ___ ∥ $\overline{UV}$

4) ___ ∥ $\overline{EF}$

Find the missing length indicated.

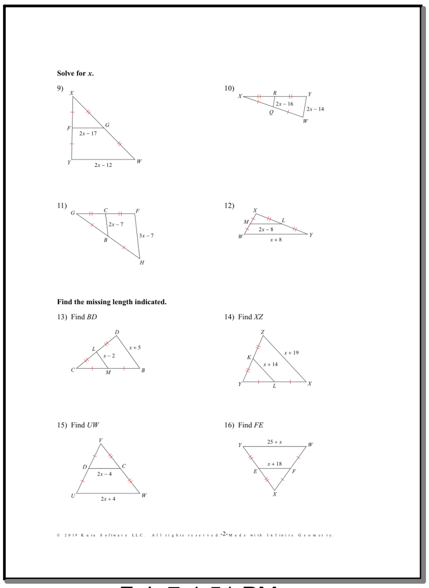
5) Find VX

6) Find IK

7) Find RT

8) Find YX

Feb 7-1:51 PM



Solve for *x*.

9) $2x - 17$, $2x - 12$

10) $2x - 16$, $2x - 14$

11) $2x - 7$, $3x - 7$

12) $2x - 8$, $x + 8$

Find the missing length indicated.

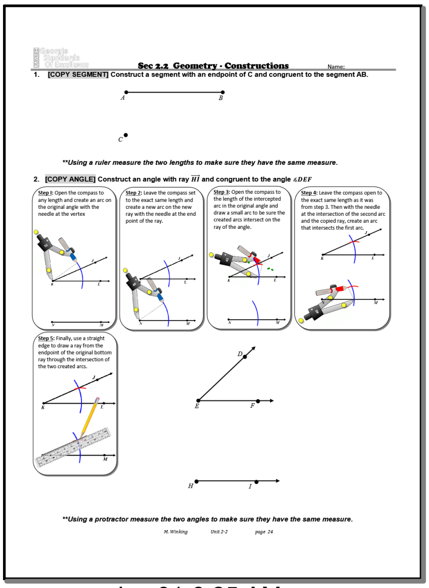
13) Find BD ($x - 2$, $x + 5$)

14) Find XZ ($x + 14$, $x + 19$)

15) Find UW ($2x - 4$, $2x + 4$)

16) Find FE ($25 + x$, $x + 18$)

Feb 7-1:51 PM



Sec 2.2 Geometry - Constructions Name:

1. **[COPY SEGMENT] Construct a segment with an endpoint of C and congruent to the segment AB.**

Using a ruler measure the two lengths to make sure they have the same measure.

2. **[COPY ANGLE] Construct an angle with ray $\overrightarrow{HI}$ and congruent to the angle $\measuredangle DEF$**

Step I: Open the compass to any length and create an arc on the original angle with the needle at the vertex

Step 2: Leave the compass set to the exact same length and create a new arc on the new ray with the needle at the end point of the ray.

Step 3: Open the compass to the length of the intercepted arc in the original angle and draw a small arc to be sure the created arcs intersect on the ray of the angle.

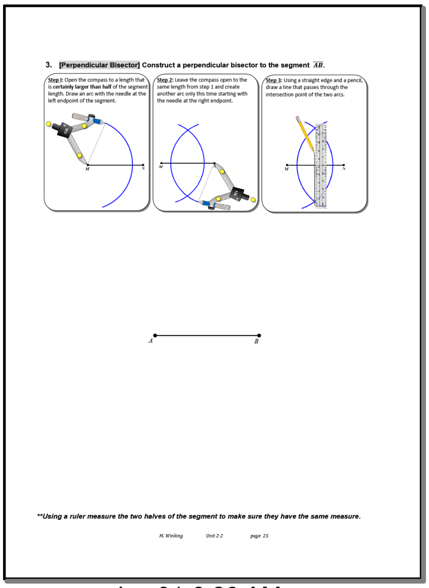
Step 4: Leave the compass open to the exact same length as it was from step 3. Then with the needle at the intersection of the second arc and the copied ray, create an arc that intersects the first arc.

Step 5: Finally, use a straight edge to draw a ray from the endpoint of the original bottom ray through the intersection of the two created arcs.

Using a protractor measure the two angles to make sure they have the same measure.

M. Winking Unit 2-2 page 24

Jan 31-8:25 AM



3. **[Perpendicular Bisector] Construct a perpendicular bisector to the segment $\overline{AB}$.**

Step I: Open the compass to a length that is **certainly larger than half** of the segment length. Draw an arc with the needle at the left endpoint of the segment.

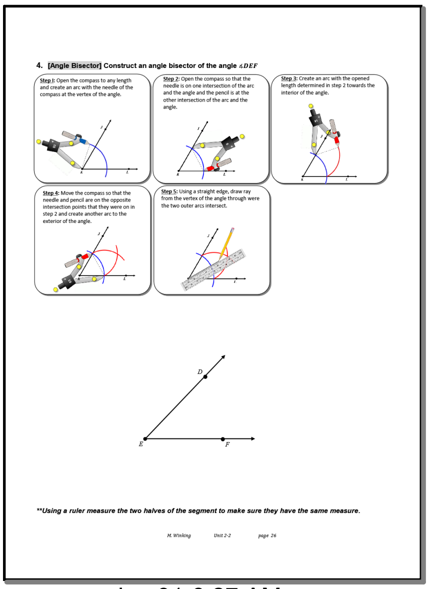
Step 2: Leave the compass open to the same length from step 1 and create another arc only this time starting with the needle at the right endpoint.

Step 3: Using a straight edge and a pencil, draw a line that passes through the intersection point of the two arcs.

Using a ruler measure the two halves of the segment to make sure they have the same measure.

M. Winking Unit 2-2 page 25

Jan 31-8:26 AM



4. **[Angle Bisector] Construct an angle bisector of the angle $\measuredangle DEF$**

Step I: Open the compass to any length and create an arc with the needle of the compass at the vertex of the angle.

Step 2: Open the compass so that the needle is on one intersection of the arc and the angle and the pencil is at the other intersection of the arc and the angle.

Step 3: Create an arc with the opened length determined in step 2 towards the interior of the angle.

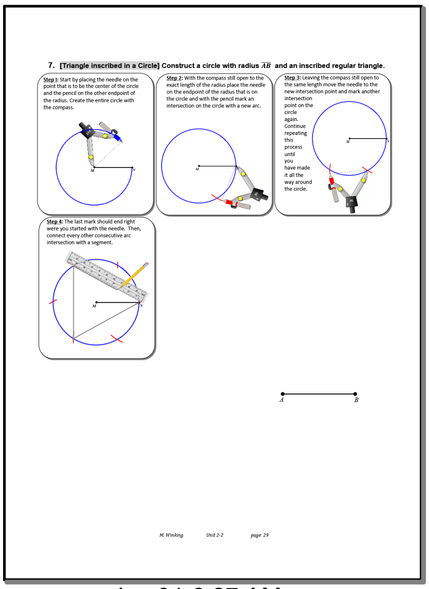
Step 4: Move the compass so that the needle and pencil are on the opposite intersection points that they were on in step 2 and create another arc to the exterior of the angle.

Step 5: Using a straight edge, draw ray from the vertex of the angle through were the two outer arcs intersect.

Using a ruler measure the two halves of the segment to make sure they have the same measure.

M. Winking Unit 2-2 page 26

Jan 31-8:27 AM



7. **[Triangle inscribed in a Circle] Construct a circle with radius $\overline{AB}$ and an inscribed regular triangle.**

Step I: Start by placing the needle on the point that is to be the center of the circle and the pencil on the other endpoint of the radius. Create the entire circle with the compass.

Step 2: With the compass still open to the exact length of the radius place the needle on the endpoint of the radius that is on the circle and with the pencil mark an intersection on the circle with a new arc.

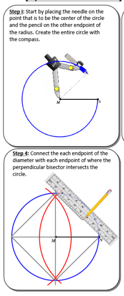
Step 3: Leaving the compass still open to the same length move the needle to the new intersection point and mark another intersection point on the circle again. Continue repeating this process until you have made it all the way around the circle.

Step 4: The last mark should end right were you started with the needle. Then, connect every other consecutive arc intersection with a segment.

M. Winking Unit 2-2 page 29

Jan 31-8:27 AM

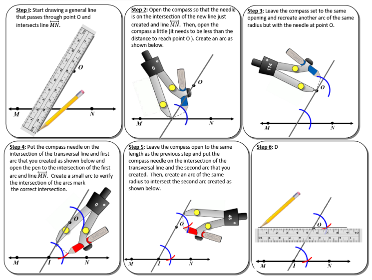
8. [Square inscribed in a Circle] Construct a circle with radius $\overline{AB}$ and an inscribed square.

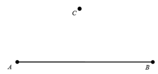


M. Winking Unit 2-2 page 30

Jan 31-8:27 AM

9. [Construct a Parallel Line given a point and a line] Construct a parallel line to $\overleftrightarrow{AB}$ through point C.



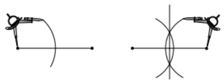


M. Winking Unit 2-2 page 31

Jan 31-8:28 AM

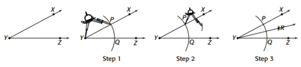
February 8, 2019, Friday

5. What does this construction show?



A. congruent segments
B. perpendicular bisector
C. bisected angle
D. parallel lines

6. What does this construction show?



A. congruent segments
B. perpendicular bisector
C. bisected angle
D. parallel lines

Jan 31-8:28 AM

https://www.mathopenref.com/tocs/constructionstoc.html

Lines

- Copy a line segment
- Sum of line segments
- Difference of two line segments
- Perpendicular bisector of a line segment
- Divide a line segment into n equal segments
- Perpendicular to a line at a point on the line
- Perpendicular to a line from an external point
- Perpendicular to a ray at its endpoint
- A parallel to a line through a point (angle copy method)
- A parallel to a line through a point (rhombus method)
- A parallel to a line through a point (translated triangle method)

Angles

- Copy an angle
- Bisect an angle
- Construct a 30° angle
- Construct a 45° angle
- Construct a 60° angle
- Construct a 90° angle (right angle)
- Sum of n angles
- Difference of two angles
- Suppplementary angle
- Complementary angle
- Constructing 75° 105° 120° 135° 150° angles and more

Triangles

- Copy a triangle
- Triangle, given all 3 sides (SSS)
- Triangle, given one side and adjacent angles (ASA)
- Triangle, given two sides and included angle (SAS)
- Triangle, given two sides and non-included angle (AAS)
- Isosceles Triangle, given base and one side
- Isosceles Triangle, given base and altitude
- Isosceles Triangle, given leg and apex angle
- 30-60-90 right triangle given the hypotenuse
- Equilateral Triangle
- Midsegment of a Triangle
- Medians of a Triangle
- Altitudes of a Triangle
- Altitudes of a Triangle (outside case)

Polygons

- Square given one side
- Square inscribed in a circle
- Hexagon given one side
- Equilateral triangle inscribed in a circle
- Hexagon inscribed in a circle
- Pentagon inscribed in a circle

Jan 31-8:41 AM

Quiz like EOC problems for constructions....

Jan 31-9:06 AM