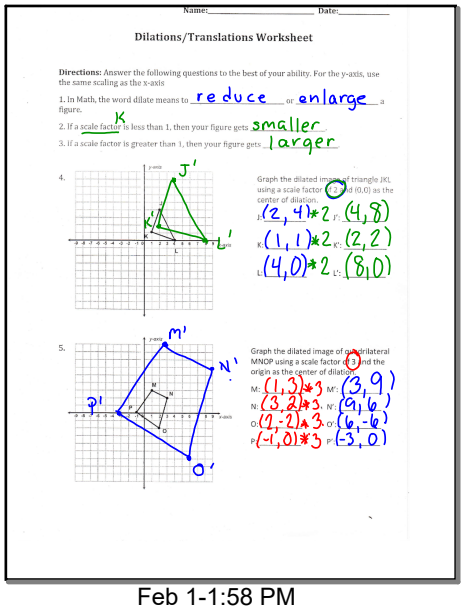
February 4, 2019, Monday

On the internet research "geometric dilation on a grid"
and copy an example.
State 2 observations about your dilation.

Jan 24-9:32 AM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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 is less than 1, then your figure gets smaller
3. If a scale factor is greater than 1, then your figure gets larger

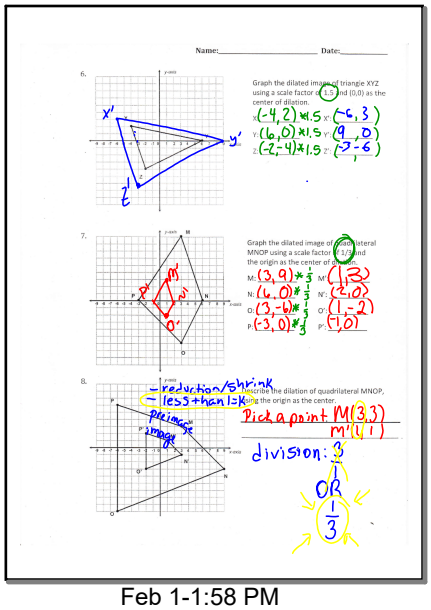
4. Graph the dilated image of triangle JKL using a scale factor of 2 and (0,0) as the center of dilation.

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


Name:_____ Date:_____

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)

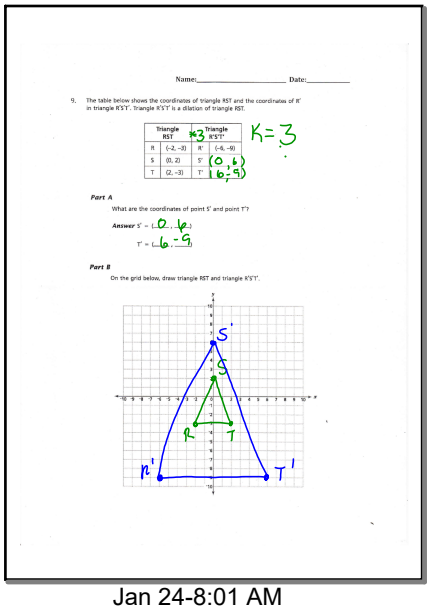
7. Graph the dilated image of quadrilateral MNOP using a scale factor of 1/3 and the origin as the center of dilation.

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 scale factor
Pick a point: M(3,3) M'(1,1)
division: 3
OR
1/3

Feb 1-1:58 PM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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)

*3 K = 3

Part A

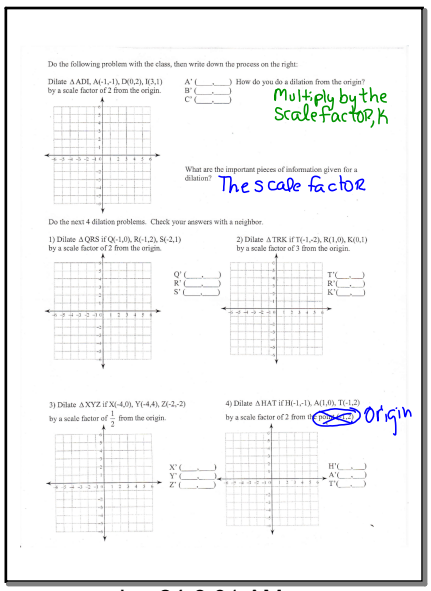
What are the coordinates of point S' and point T'?

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.

A' (____,____)
B' (____,____)
C' (____,____)

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.

Q' (____,____)
R' (____,____)
S' (____,____)

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

T' (____,____)
R' (____,____)
K' (____,____)

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

X' (____,____)
Y' (____,____)
Z' (____,____)

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

H' (____,____)
A' (____,____)
T' (____,____)

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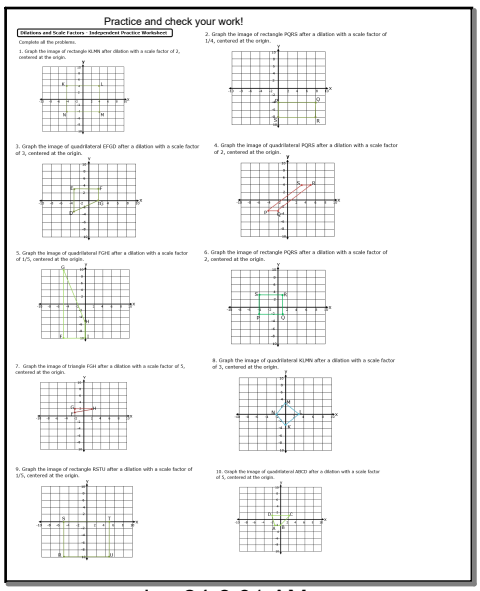
Practice and check your work!

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.

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.

5. Graph the image of quadrilateral FGHE 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.

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.

9. Graph the image of rectangle RSTU after a dilation with a scale factor of 1/3, centered at the origin.

10. Graph the image of quadrilateral ABCD after a dilation with a scale factor of 1, centered at the origin.

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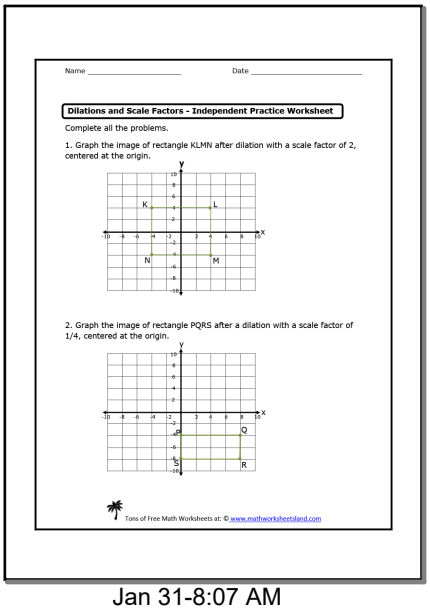
Name _____ Date _____

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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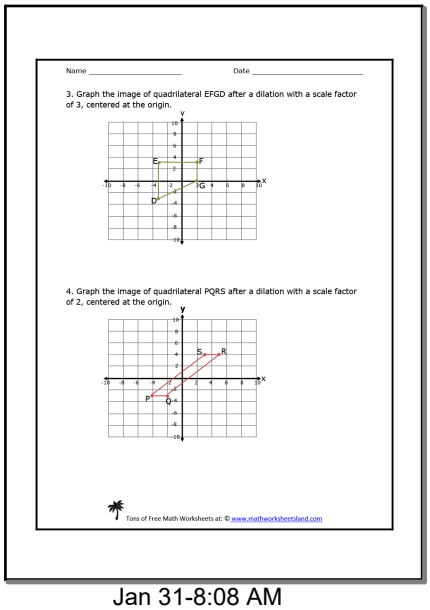
Name _____ Date _____

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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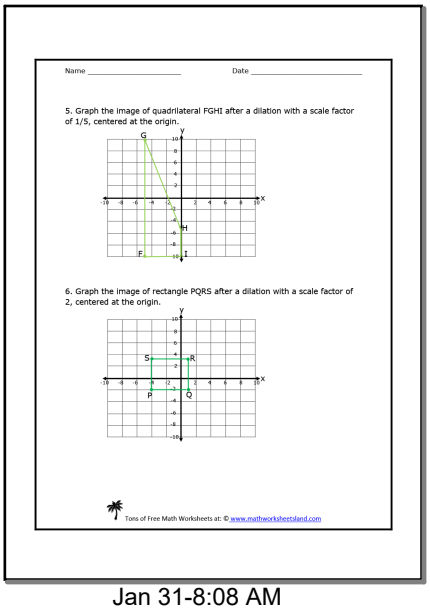
Name _____ Date _____

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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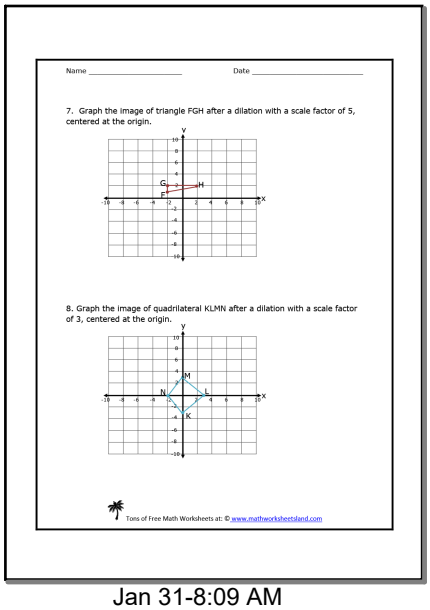
Name _____ Date _____

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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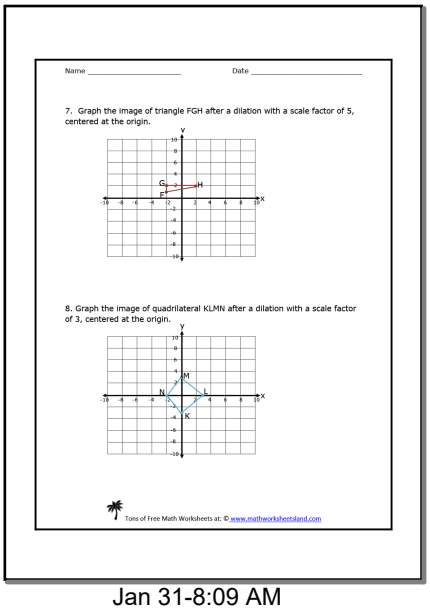
Name _____ Date _____

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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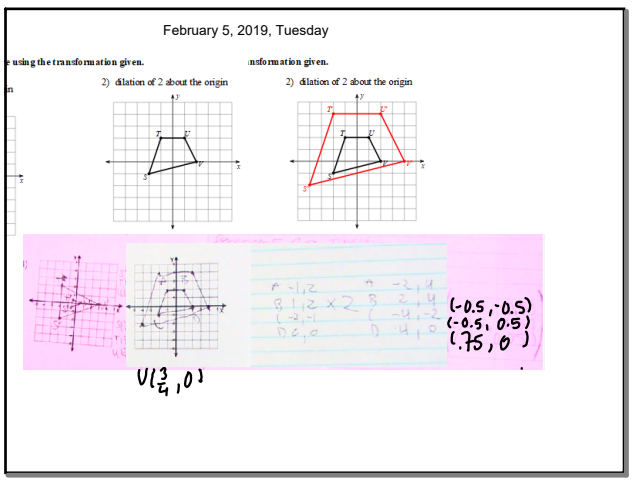

February 5, 2019, Tuesday

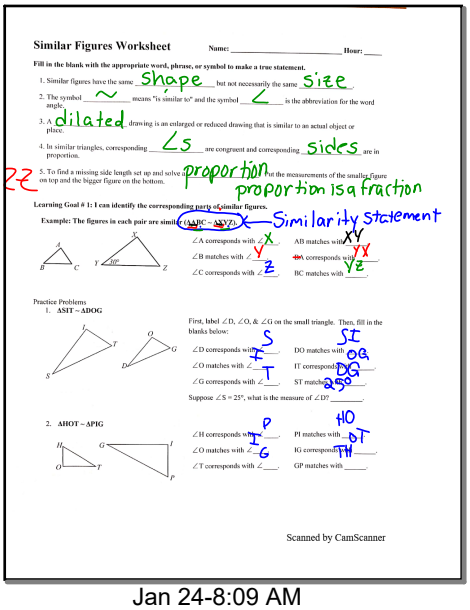
e using the transformation given. nsformation given.

2) dilation of 2 about the origin 2) dilation of 2 about the origin

(-0.5, -0.5)
(-0.5, 0.5)
(.75, 0)

V(3/4, 0)

Jan 24-8:06 AM


Similar Figures Worksheet

Name: _____ Hour: ____

Fill in the blank with the appropriate word, phrase, or symbol to make a true statement.

1. Similar figures have the same Shape but not necessarily the same Size
2. The symbol ~ means "is similar to" and the symbol ∠ is the abbreviation for the word angle
3. A dilated drawing is an enlarged or reduced drawing that is similar to an actual object or place.
4. In similar triangles, corresponding ∠s are congruent and corresponding sides are in proportion.
5. To find a missing side length set up and solve a proportion that the measurements of the smaller figure on top and the bigger figure on the bottom.

proportion is a fraction

Learning Goal # 1: I can identify the corresponding parts of similar figures.

Example: The figures in each pair are similar (ΔABC ~ ΔXYZ). Similarity Statement

∠A corresponds with ∠X, AB matches with XY
∠B matches with ∠Y, BC corresponds with YZ
∠C corresponds with ∠Z, AC matches with XZ

Practice Problems

1. ΔSIT ~ ΔDOG

First, label ∠D, ∠O, & ∠G on the small triangle. Then, fill in the blanks below:

∠D corresponds with ∠S, DO matches with SI
∠O matches with ∠I, IT corresponds with OG
∠G corresponds with ∠T, ST matches with DG

Suppose ∠S = 25°, what is the measure of ∠D? _____

2. ΔHOT ~ ΔPIG

∠H corresponds with ∠P, PI matches with HO
∠O matches with ∠I, IG corresponds with OT
∠T corresponds with ∠G, GP matches with HT

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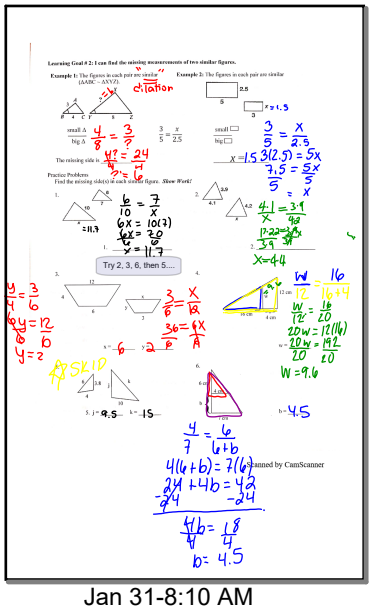
Learning Goal # 2: I can find the missing measurements of two similar figures.

Example 1: The figures in each pair are similar (ΔABC ~ ΔXYZ). dilation

Example 2: The figures in each pair are similar

Practice Problems

Find the missing side(s) in each similar figure. Show Work!

Try 2, 3, 6, then 5....

SKIP

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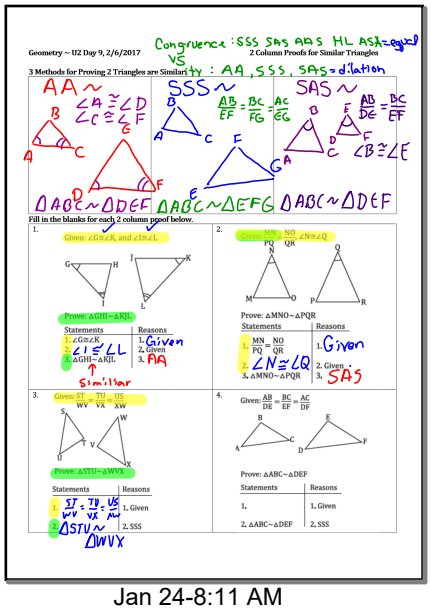
Geometry ~ U2 Day 9, 2/6/2017

2 Column Proofs for Similar Triangles

Congruence: SSS SAS ASA HL ASA=AAS

vs

Similarity: AA, SSS, SAS = dilation

3 Methods for Proving 2 Triangles are Similar

AA ~ ∠A ≅ ∠D, ∠C ≅ ∠F — ΔABC ~ ΔDEF

SSS ~ AB/EF = BC/FG = AC/EG — ΔABC ~ ΔEFG

SAS ~ AB/DE = BC/EF, ∠B ≅ ∠E — ΔABC ~ ΔDEF

Fill in the blanks for each 2 column proof below.

1. Given: ∠G ≅ ∠K and ∠H ≅ ∠L — Prove: ΔGHI ~ ΔKJL

Statements	Reasons
1. ∠G ≅ ∠K	1. Given
2. ∠H ≅ ∠L	2. Given
3. ΔGHI ~ ΔKJL	3. AA

Similar

2. Given: MN/PQ = NO/QR, ∠N ≅ ∠Q — Prove: ΔMNO ~ ΔPQR

Statements	Reasons
1. MN/PQ = NO/QR	1. Given
2. ∠N ≅ ∠Q	2. Given
3. ΔMNO ~ ΔPQR	3. SAS

3. Given: ST/WV = TU/VX = US/XW — Prove: ΔSTU ~ ΔWVX

Statements	Reasons
1. ST/WV = TU/VX = US/XW	1. Given
2. ΔSTU ~ ΔWVX	2. SSS

4. Given: AB/DE = BC/EF = AC/DF — Prove: ΔABC ~ ΔDEF

Statements	Reasons
1.	1. Given
2. ΔABC ~ ΔDEF	2. SSS

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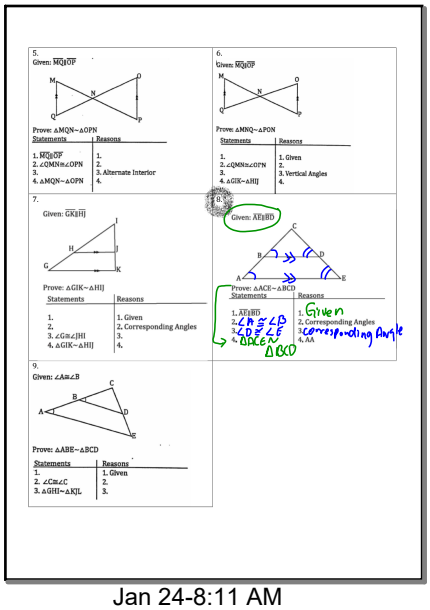

5. Given: MQ ⊥ OP — Prove: ΔMQN ~ ΔOPN

Statements	Reasons
1. MQ ⊥ OP	1.
2. ∠QMN ≅ ∠OPN	2.
3.	3. Alternate Interior
4. ΔMQN ~ ΔOPN	4.

6. Given: MQ ⊥ OP — Prove: ΔMNQ ~ ΔPON

Statements	Reasons
1.	1. Given
2. ∠QMN ≅ ∠OPN	2.
3.	3. Vertical Angles
4. ΔGIK ~ ΔHIJ	4.

7. Given: GK ∥ HJ — Prove: ΔGIK ~ ΔHIJ

Statements	Reasons
1.	1. Given
2.	2. Corresponding Angles
3. ∠GKI ≅ ∠HJI	3.
4. ΔGIK ~ ΔHIJ	4.

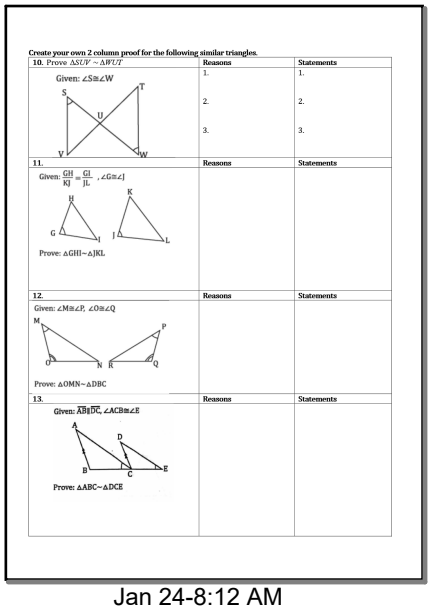
Given: AE ∥ BD — Prove: ΔACE ~ ΔBCD

Statements	Reasons
1. AE ∥ BD	1. Given
2. ∠A ≅ ∠B	2. Corresponding Angles
3. ∠DEC ≅ ∠E	3. Corresponding Angle
4. ΔDEC ~ ΔBCD	4. AA

9. Given: ∠A ≅ ∠B — Prove: ΔABE ~ ΔBCD

Statements	Reasons
1.	1. Given
2. ∠C ≅ ∠C	2.
3. ΔGHI ~ ΔKJL	3.

Jan 24-8:11 AM


Create your own 2 column proof for the following similar triangles.

10. Prove ΔSUV ~ ΔWUT — Given: ∠S ≅ ∠W

Statements	Reasons
1.	1.
2.	2.
3.	3.

11. Given: GH/KJ = GI/JL, ∠G ≅ ∠J — Prove: ΔGHI ~ ΔJKL

Statements	Reasons

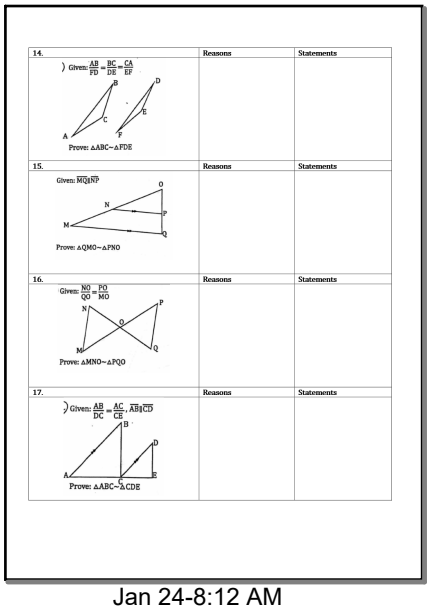
12. Given: ∠M ≅ ∠P, ∠O ≅ ∠Q — Prove: ΔOMN ~ ΔRBC

Statements	Reasons

13. Given: AB ⊥ DC, ∠ACB ≅ ∠E — Prove: ΔABC ~ ΔDCE

Statements	Reasons

Jan 24-8:12 AM


14. Given: AB/FD = BC/DE = CA/EF — Prove: ΔABC ~ ΔFDE

Statements	Reasons

15. Given: MQ ⊥ NP — Prove: ΔQMO ~ ΔPNO

Statements	Reasons

16. Given: NO/QO = PO/MO — Prove: ΔMNO ~ ΔPQO

Statements	Reasons

17. Given: AB/DC = AC/CE, AB ∥ CD — Prove: ΔABC ~ ΔCDE

Statements	Reasons

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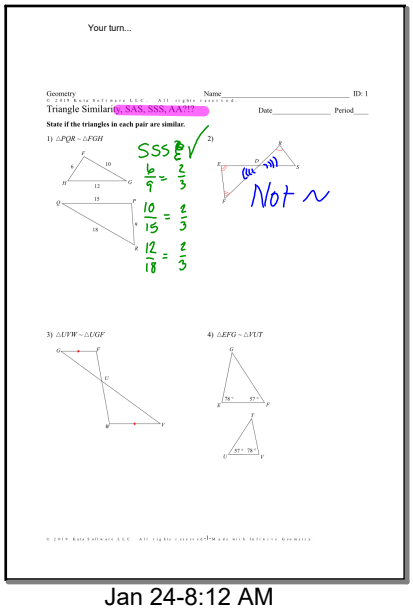

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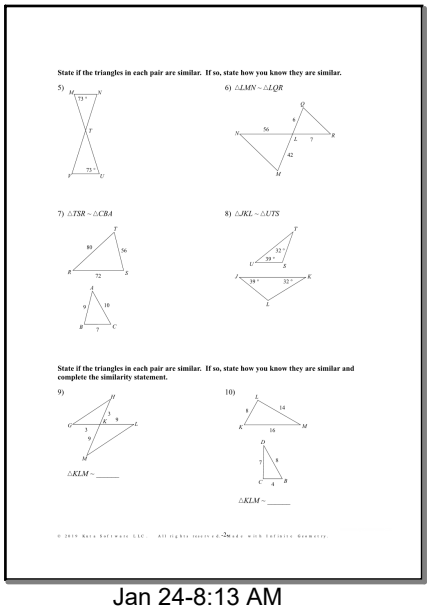

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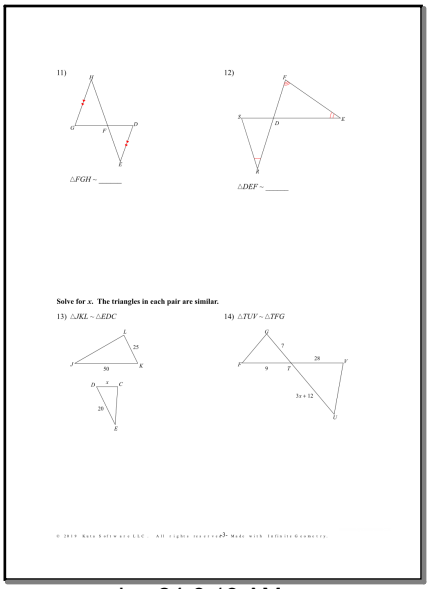

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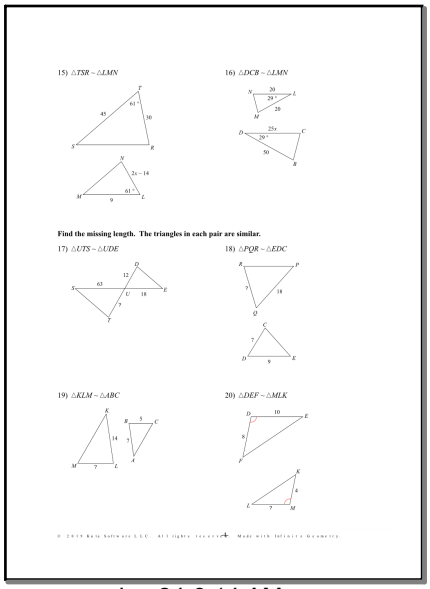

Jan 24-8:14 AM

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...

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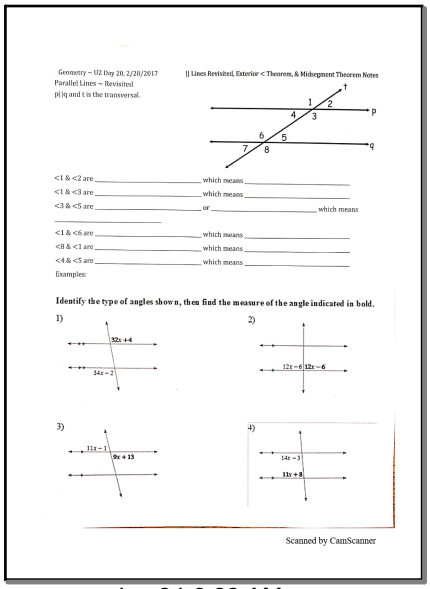

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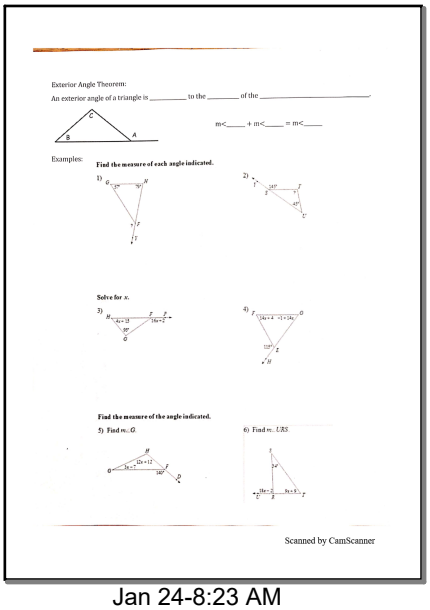
Exterior Angle Theorem:
An exterior angle of a triangle is _____ to the _____ of the _____.
m∠_____ + m∠_____ = m∠_____
Examples:
Find the measure of each angle indicated.
Solve for x.
Find the measure of the angle indicated.
5) Find m∠G.
6) Find m∠UXS.
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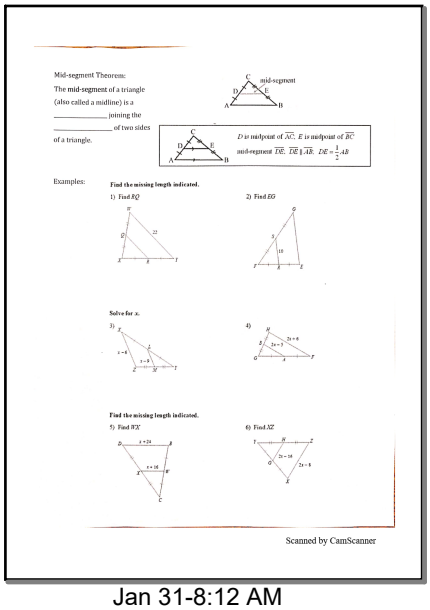
Mid-segment Theorem:
The mid-segment of a triangle (also called a midline) is a _____ joining the _____ of two sides of a triangle.
mid-segment
D is midpoint of $\overline{AC}$, E is midpoint of $\overline{BC}$.
mid-segment $\overline{DE}$, $\overline{DE} \parallel \overline{AB}$, $DE = \frac{1}{2}AB$
Examples:
Find the missing length indicated.
1) Find RQ
2) Find EG
Solve for x.
Find the missing length indicated.
5) Find WX
6) Find NZ
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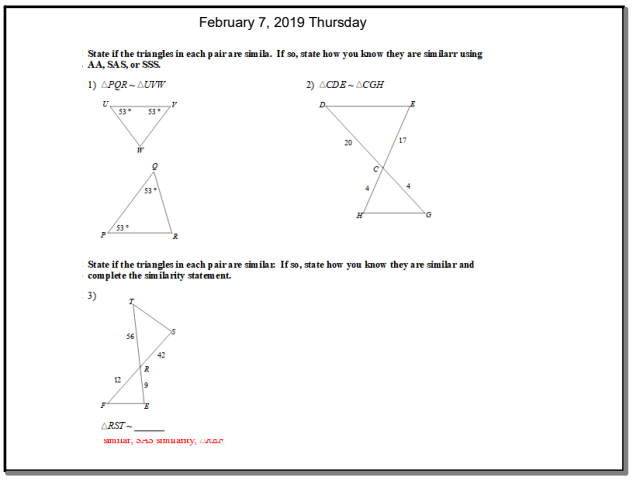
February 7, 2019 Thursday
State if the triangles in each pair are simila. If so, state how you know they are similarr using AA, SAS, or SSS.
1) △PQR ~ △UVW
2) △CDE ~ △CGH
State if the triangles in each pair are similar. If so, state how you know they are similar and complete the similarity statement.
3)
△RST ~ _____
similar, SAS similarity, △RST

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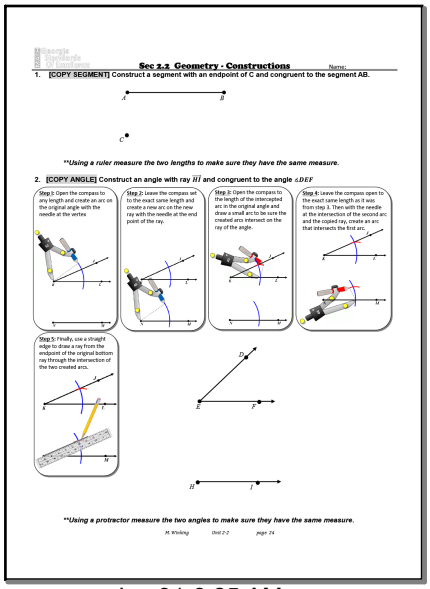
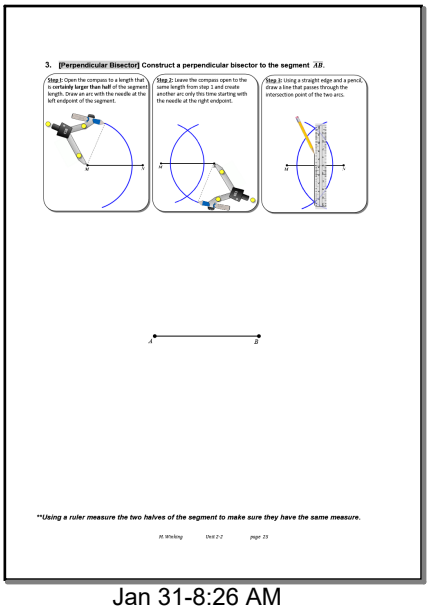
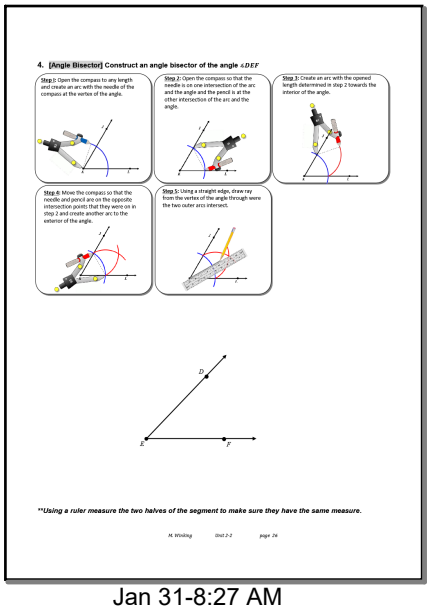

Sec 3.3 Geometry - Constructions Name:
1. [COPY SEGMENT] Construct a segment with an endpoint of C and congruent to the segment AB.
**Using a ruler measure the two lengths to make sure they have the same measure.
2. [COPY ANGLE] Construct an angle with ray $\overrightarrow{HI}$ and congruent to the angle ∠DEF
Step 1: 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

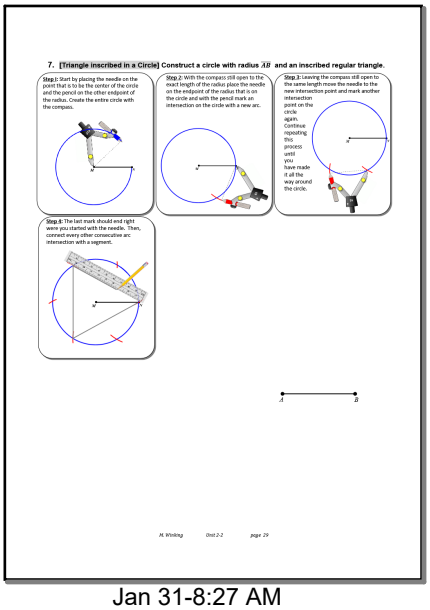
Jan 31-8:25 AM


3. [Perpendicular Bisector] Construct a perpendicular bisector to the segment $\overline{AB}$.
Step 1: 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 23

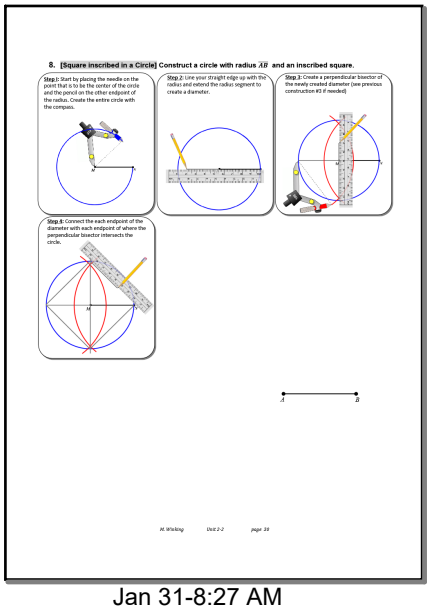
Jan 31-8:26 AM


4. [Angle Bisector] Construct an angle bisector of the angle ∠DEF
Step 1: 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

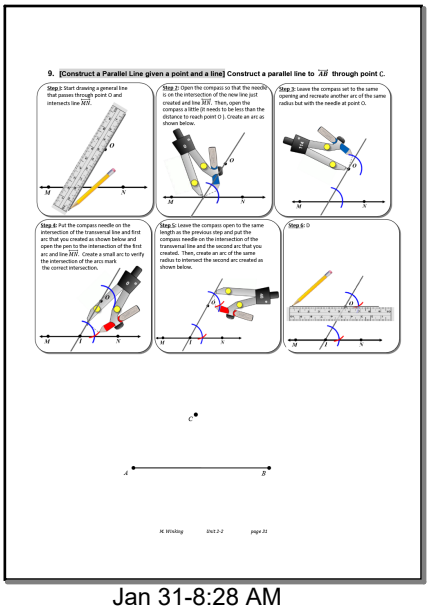
Jan 31-8:27 AM



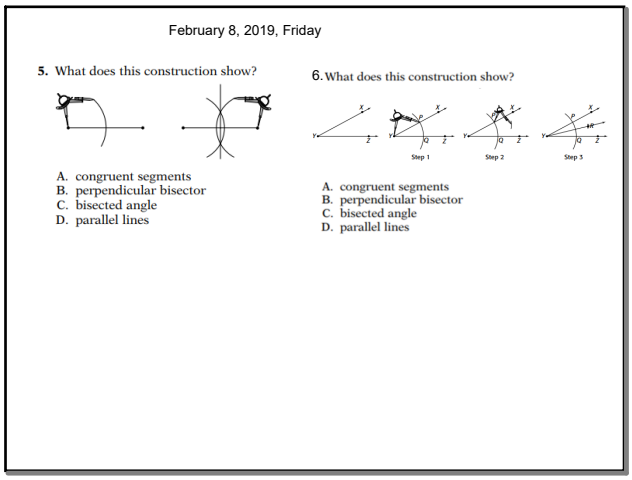
Jan 31-8:27 AM



Jan 31-8:27 AM

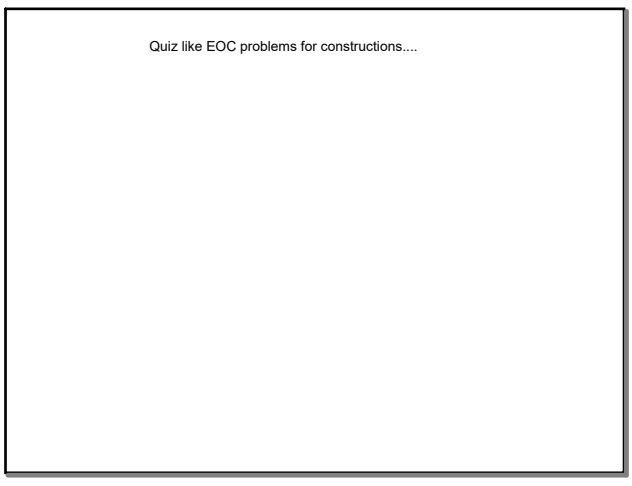


Jan 31-8:28 AM



Jan 31-8:28 AM

Jan 31-8:41 AM



Jan 31-9:06 AM