

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.

- In Math, the word dilate means to reduce or enlarge a figure.
- If a scale factor is less than 1, then your figure gets smaller.
- If a scale factor is greater than 1, then your figure gets larger.

6. Graph the dilated image of triangle KJL using a scale factor of 2 and the origin as the center of dilation.

$(2, 4) \times 2 = (4, 8)$
 $(1, 1) \times 2 = (2, 2)$
 $(4, 0) \times 2 = (8, 0)$

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

$(1, 3) \times 3 = (3, 9)$
 $(3, 2) \times 3 = (9, 6)$
 $(-2, -1) \times 3 = (-6, -3)$
 $(-1, 0) \times 3 = (-3, 0)$

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6. Graph the dilated image of triangle XYZ using a scale factor of 1.5 and the origin as the center of dilation.

$(-4, 2) \times 1.5 = (-6, 3)$
 $(6, 0) \times 1.5 = (9, 0)$
 $(-2, -4) \times 1.5 = (-3, -6)$

7. Graph the dilated image of quadrilateral MNPQ using a scale factor of 1.5 and the origin as the center of dilation.

$(3, 9) \times 1.5 = (4.5, 13.5)$
 $(6, 0) \times 1.5 = (9, 0)$
 $(3, -6) \times 1.5 = (4.5, -9)$
 $(-3, 0) \times 1.5 = (-4.5, 0)$

8. Describe the dilation of quadrilateral MNPQ. Pick a point M(3,3) and dilate it by a scale factor of 1/3. $M'(1,1)$

Reduction/shrink (less than 1)
 Enlarge (greater than 1)
 division: 3
 OR $\frac{1}{3}$

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

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

Part A: What are the coordinates of point S' and point T'?

Answer: S' = (-6, -9)
 T' = (6, -9)

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

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

Dilate $\triangle ADR$, A(-1, 1), D(0, 2), R(3, 1) by a scale factor of 2 from the origin.

A' () D' () R' ()

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.

- Dilate $\triangle QRS$ if Q(-1, 3), R(1, 2), S(-2, 1) by a scale factor of 2 from the origin.
 Q' () R' () S' ()
- Dilate $\triangle TUV$ if T(-1, -2), U(1, 0), V(-2, 1) by a scale factor of 3 from the origin.
 T' () U' () V' ()
- Dilate $\triangle XYZ$ if X(-4, 0), Y(4, 4), Z(-2, -2) by a scale factor of 1/2 from the origin.
 X' () Y' () Z' ()
- Dilate $\triangle HAT$ if H(-1, -1), A(1, 0), T(-2, 2) by a scale factor of 2 from the origin.
 H' () A' () T' ()

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Practice and check your work!

Dilations and Scale Factors: Independent Practice Worksheet

- Graph the image of rectangle KLMN after a dilation with a scale factor of 1/2, centered at the origin.
- Graph the image of rectangle PQRS after a dilation with a scale factor of 1/4, centered at the origin.
- Graph the image of quadrilateral EFGH after a dilation with a scale factor of 2, centered at the origin.
- Graph the image of quadrilateral PQRS after a dilation with a scale factor of 1/2, centered at the origin.
- Graph the image of quadrilateral PQRS after a dilation with a scale factor of 2, centered at the origin.
- Graph the image of quadrilateral PQRS after a dilation with a scale factor of 1/2, centered at the origin.
- Graph the image of rectangle KLMN after a dilation with a scale factor of 1/2, centered at the origin.
- Graph the image of quadrilateral PQRS after a dilation with a scale factor of 2, centered at the origin.
- Graph the image of rectangle KLMN after a dilation with a scale factor of 1/2, centered at the origin.
- Graph the image of quadrilateral PQRS after a dilation with a scale factor of 1/2, 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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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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5. Graph the image of quadrilateral FGHI after a dilation with a scale factor of 3/5, 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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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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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

using the transformation given.

2) dilation of 2 about the origin

2) dilation of 2 about the origin

Handwritten notes on a pink background:

$U(\frac{3}{4}, 0)$

$r = -1.2$
 $8.12 \times 2 = 16.24$
 -2.1
 0.0

$r = -2.4$
 $8.24 \times 2 = 16.48$
 -4.2
 0.0

$(-0.5, -0.5)$
 $(-0.5, 0.5)$
 $(7.5, 0)$

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.

- Similar figures have the same shape, but not necessarily the same size.
- The symbol \sim means "is similar to" and the symbol \cong is the abbreviation for the word congruent.
- A dilated drawing is an enlarged or reduced drawing that is similar to an actual object or figure.
- In similar triangles, corresponding angles are congruent and corresponding sides are in proportion.
- To find a missing side length set up and solve a proportion for the measurements of the similar figures and use the bigger figure on the bottom.

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

Example: The figures in each pair are similar. Similarity Statement

$\triangle ABC \sim \triangle XYZ$

$\angle A$ corresponds with $\angle X$ AB matches with XY
 $\angle B$ matches with $\angle Y$ $\angle C$ corresponds with $\angle Z$
 $\angle C$ corresponds with $\angle Z$ BC matches with YZ

Practise Problems:

- $\triangle NKT \sim \triangle OJK$
 First, label $\angle D, \angle O, \angle G$ on the small triangle. Then, fill in the blanks below:
 $\angle D$ corresponds with $\angle O$ DO matches with OK
 $\angle O$ matches with $\angle O$ OT matches with OK
 $\angle G$ corresponds with $\angle K$ GT matches with OK
 Suppose $\angle S = 25^\circ$, what is the measure of $\angle D$? 25
- $\triangle HQT \sim \triangle PIG$
 $\angle H$ corresponds with $\angle P$ HT matches with PI
 $\angle O$ matches with $\angle G$ IG corresponds with TH
 $\angle T$ corresponds with $\angle P$ 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. $\triangle ABC \sim \triangle DEF$

$\frac{AB}{DE} = \frac{BC}{EF} = \frac{AC}{DF}$

$\frac{4}{8} = \frac{3}{6} = \frac{x}{12}$

$\frac{4}{8} = \frac{x}{12}$
 $4 \cdot 12 = 8x$
 $48 = 8x$
 $6 = x$

Example 2: The figures in each pair are similar. $\triangle ABC \sim \triangle DEF$

$\frac{AB}{DE} = \frac{BC}{EF} = \frac{AC}{DF}$

$\frac{3}{5} = \frac{x}{25}$
 $3 \cdot 25 = 5x$
 $75 = 5x$
 $15 = x$

The missing side is 15.

Practise Problems: Find the missing side length of each similar figure. Show Work!

1. $\triangle ABC \sim \triangle DEF$
 $\frac{6}{10} = \frac{7}{x}$
 $6x = 70$
 $x = \frac{70}{6} = 11\frac{2}{3}$

2. $\triangle ABC \sim \triangle DEF$
 $\frac{4}{10} = \frac{3}{x}$
 $4x = 30$
 $x = \frac{30}{4} = 7.5$

3. $\triangle ABC \sim \triangle DEF$
 $\frac{10}{15} = \frac{12}{x}$
 $10x = 180$
 $x = 18$

4. $\triangle ABC \sim \triangle DEF$
 $\frac{4}{10} = \frac{3}{x}$
 $4x = 30$
 $x = 7.5$

5. $\triangle ABC \sim \triangle DEF$
 $\frac{6}{10} = \frac{7}{x}$
 $6x = 70$
 $x = \frac{70}{6} = 11\frac{2}{3}$

6. $\triangle ABC \sim \triangle DEF$
 $\frac{3}{5} = \frac{x}{25}$
 $3 \cdot 25 = 5x$
 $75 = 5x$
 $15 = x$

7. $\triangle ABC \sim \triangle DEF$
 $\frac{4}{10} = \frac{3}{x}$
 $4x = 30$
 $x = 7.5$

8. $\triangle ABC \sim \triangle DEF$
 $\frac{6}{10} = \frac{7}{x}$
 $6x = 70$
 $x = \frac{70}{6} = 11\frac{2}{3}$

9. $\triangle ABC \sim \triangle DEF$
 $\frac{3}{5} = \frac{x}{25}$
 $3 \cdot 25 = 5x$
 $75 = 5x$
 $15 = x$

10. $\triangle ABC \sim \triangle DEF$
 $\frac{4}{10} = \frac{3}{x}$
 $4x = 30$
 $x = 7.5$

11. $\triangle ABC \sim \triangle DEF$
 $\frac{6}{10} = \frac{7}{x}$
 $6x = 70$
 $x = \frac{70}{6} = 11\frac{2}{3}$

12. $\triangle ABC \sim \triangle DEF$
 $\frac{3}{5} = \frac{x}{25}$
 $3 \cdot 25 = 5x$
 $75 = 5x$
 $15 = x$

13. $\triangle ABC \sim \triangle DEF$
 $\frac{4}{10} = \frac{3}{x}$
 $4x = 30$
 $x = 7.5$

14. $\triangle ABC \sim \triangle DEF$
 $\frac{6}{10} = \frac{7}{x}$
 $6x = 70$
 $x = \frac{70}{6} = 11\frac{2}{3}$

15. $\triangle ABC \sim \triangle DEF$
 $\frac{3}{5} = \frac{x}{25}$
 $3 \cdot 25 = 5x$
 $75 = 5x$
 $15 = x$

16. $\triangle ABC \sim \triangle DEF$
 $\frac{4}{10} = \frac{3}{x}$
 $4x = 30$
 $x = 7.5$

17. $\triangle ABC \sim \triangle DEF$
 $\frac{6}{10} = \frac{7}{x}$
 $6x = 70$
 $x = \frac{70}{6} = 11\frac{2}{3}$

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Geometry - U2 Day 9, 2/6/2017

Congruence: SSS SAS AAS HL ASA = equal
VS
2 Column Proofs for Similar Triangles
Similarity: AA, SSS, SAS = dilation

3 Methods for Proving 2 Triangles are Similar

AA \sim $\angle A \cong \angle D$
 $\angle C \cong \angle F$
 $\triangle ABC \sim \triangle DEF$

SSS \sim $\frac{AB}{DE} = \frac{BC}{EF} = \frac{AC}{DF}$
 $\triangle ABC \sim \triangle DEF$

SAS \sim $\frac{AB}{DE} = \frac{AC}{DF}$
 $\angle C \cong \angle F$
 $\triangle ABC \sim \triangle DEF$

Fill in the blanks for each 2 column proof below.

- Given: $\angle A \cong \angle D$, $\angle B \cong \angle E$
 Prove: $\triangle ABC \sim \triangle DEF$
 Statements: $\angle A \cong \angle D$ 1. Given
 $\angle B \cong \angle E$ 2. Given
 $\triangle ABC \sim \triangle DEF$ 3. AA
 Reasons: 1. Given
 2. Corresponding Angles
 3. AA
- Given: $\frac{MN}{PQ} = \frac{NO}{QR}$, $\angle M \cong \angle P$
 Prove: $\triangle MNO \sim \triangle PQR$
 Statements: $\frac{MN}{PQ} = \frac{NO}{QR}$ 1. Given
 $\angle M \cong \angle P$ 2. Given
 $\triangle MNO \sim \triangle PQR$ 3. SAS
 Reasons: 1. Given
 2. Corresponding Angles
 3. SAS
- Given: $\frac{ST}{UV} = \frac{TV}{VW}$, $\angle S \cong \angle U$
 Prove: $\triangle STU \sim \triangle VWX$
 Statements: $\frac{ST}{UV} = \frac{TV}{VW}$ 1. Given
 $\angle S \cong \angle U$ 2. SSS
 Reasons: 1. Given
 2. SSS
- Given: $\frac{AB}{DE} = \frac{BC}{EF} = \frac{AC}{DF}$
 Prove: $\triangle ABC \sim \triangle DEF$
 Statements: 1. Given
 2. $\triangle ABC \sim \triangle DEF$ 2. SSS
 Reasons: 1. Given
 2. SSS

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- Given: $\triangle MNO \sim \triangle PQR$
 Prove: $\triangle MNO \sim \triangle PQR$
 Statements: 1. $\triangle MNO \sim \triangle PQR$
 2. $\triangle MNO \sim \triangle PQR$
 3. $\triangle MNO \sim \triangle PQR$
 4. $\triangle MNO \sim \triangle PQR$
 Reasons: 1. Given
 2. Alternate Interior
 3. Vertical Angles
 4. AA
- Given: $\triangle GHI \sim \triangle JKL$
 Prove: $\triangle GHI \sim \triangle JKL$
 Statements: 1. $\triangle GHI \sim \triangle JKL$
 2. $\triangle GHI \sim \triangle JKL$
 3. $\triangle GHI \sim \triangle JKL$
 4. $\triangle GHI \sim \triangle JKL$
 Reasons: 1. Given
 2. Corresponding Angles
 3. AA
 4. AA
- Given: $\triangle ABC \sim \triangle DEF$
 Prove: $\triangle ABC \sim \triangle DEF$
 Statements: 1. $\triangle ABC \sim \triangle DEF$
 2. $\triangle ABC \sim \triangle DEF$
 3. $\triangle ABC \sim \triangle DEF$
 4. $\triangle ABC \sim \triangle DEF$
 Reasons: 1. Given
 2. Corresponding Angles
 3. Corresponding Angles
 4. AA
- Given: $\triangle ABC \sim \triangle DEF$
 Prove: $\triangle ABC \sim \triangle DEF$
 Statements: 1. $\triangle ABC \sim \triangle DEF$
 2. $\triangle ABC \sim \triangle DEF$
 3. $\triangle ABC \sim \triangle DEF$
 Reasons: 1. Given
 2. Corresponding Angles
 3. AA

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

- Prove: $\triangle SPQ \sim \triangle RPT$
 Given: $\angle S \cong \angle R$
 Statements: $\angle S \cong \angle R$ 1. Given
 $\angle P \cong \angle P$ 2. Given
 $\triangle SPQ \sim \triangle RPT$ 3. AA
 Reasons: 1. Given
 2. Vertical Angles
 3. AA
- Given: $\frac{GH}{JK} = \frac{GI}{JL}$, $\angle G \cong \angle J$
 Prove: $\triangle GHI \sim \triangle JKL$
 Statements: $\frac{GH}{JK} = \frac{GI}{JL}$ 1. Given
 $\angle G \cong \angle J$ 2. Given
 $\triangle GHI \sim \triangle JKL$ 3. SAS
 Reasons: 1. Given
 2. Corresponding Angles
 3. SAS
- Given: $\angle M \cong \angle P$, $\angle O \cong \angle Q$
 Prove: $\triangle OMN \sim \triangle PQR$
 Statements: $\angle M \cong \angle P$ 1. Given
 $\angle O \cong \angle Q$ 2. Given
 $\triangle OMN \sim \triangle PQR$ 3. AA
 Reasons: 1. Given
 2. Corresponding Angles
 3. AA
- Given: $\frac{AB}{DC} = \frac{AC}{CE}$, $\angle ACB \cong \angle ECB$
 Prove: $\triangle ABC \sim \triangle DCE$
 Statements: $\frac{AB}{DC} = \frac{AC}{CE}$ 1. Given
 $\angle ACB \cong \angle ECB$ 2. Given
 $\triangle ABC \sim \triangle DCE$ 3. SAS
 Reasons: 1. Given
 2. Corresponding Angles
 3. SAS

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- Given: $\frac{AB}{DC} = \frac{AC}{CE}$, $\angle ACB \cong \angle ECB$
 Prove: $\triangle ABC \sim \triangle DCE$
 Statements: $\frac{AB}{DC} = \frac{AC}{CE}$ 1. Given
 $\angle ACB \cong \angle ECB$ 2. Given
 $\triangle ABC \sim \triangle DCE$ 3. SAS
 Reasons: 1. Given
 2. Corresponding Angles
 3. SAS
- Given: $\triangle MNO \sim \triangle PQR$
 Prove: $\triangle MNO \sim \triangle PQR$
 Statements: 1. $\triangle MNO \sim \triangle PQR$
 2. $\triangle MNO \sim \triangle PQR$
 3. $\triangle MNO \sim \triangle PQR$
 Reasons: 1. Given
 2. Corresponding Angles
 3. AA
- Given: $\frac{NO}{QP} = \frac{OQ}{PQ}$
 Prove: $\triangle MNO \sim \triangle PQR$
 Statements: $\frac{NO}{QP} = \frac{OQ}{PQ}$ 1. Given
 $\angle M \cong \angle P$ 2. Given
 $\triangle MNO \sim \triangle PQR$ 3. SAS
 Reasons: 1. Given
 2. Corresponding Angles
 3. SAS
- Given: $\frac{AB}{DC} = \frac{AC}{CE}$, $\angle ACB \cong \angle ECB$
 Prove: $\triangle ABC \sim \triangle DCE$
 Statements: $\frac{AB}{DC} = \frac{AC}{CE}$ 1. Given
 $\angle ACB \cong \angle ECB$ 2. Given
 $\triangle ABC \sim \triangle DCE$ 3. SAS
 Reasons: 1. Given
 2. Corresponding Angles
 3. SAS

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Your turn...

Geometry Name _____ ID: 1
 © 2014 Holt Rinehart and Winston, LLC. All rights reserved. Triangle Similarity (SAS, SSS, AA)!!
 Date _____ Period _____

State if the triangles in each pair are similar.

1) $\triangle PQR \sim \triangle RSM$

 SSS \checkmark
 $\frac{10}{6} = \frac{12}{8} = \frac{18}{9} = \frac{5}{3}$
 Not \sim

2)

3) $\triangle EPW \sim \triangle RGF$

4) $\triangle EFG \sim \triangle FET$

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State if the triangles in each pair are similar. If so, state how you know they are similar.

5) $\triangle MNP \sim \triangle QRS$

6) $\triangle LMN \sim \triangle LQR$

7) $\triangle TSR \sim \triangle CRM$

8) $\triangle JKL \sim \triangle LUTS$

State if the triangles in each pair are similar. If so, state how you know they are similar and complete the similarity statement.

9) $\triangle JKM \sim$ _____

10) $\triangle KLM \sim$ _____

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11)

$\triangle PFG \sim$ _____

12)

$\triangle DEF \sim$ _____

Solve for x . The triangles in each pair are similar.

13) $\triangle JKL \sim \triangle EDC$

14) $\triangle TUV \sim \triangle FGH$

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15) $\triangle TSR \sim \triangle LMN$

16) $\triangle DCB \sim \triangle LMN$

Find the missing length. The triangles in each pair are similar.

17) $\triangle LUTS \sim \triangle LQPE$

18) $\triangle PQR \sim \triangle EDC$

19) $\triangle KLM \sim \triangle ABC$

20) $\triangle DEF \sim \triangle MLK$

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

Geometry - 12 (by 20, 2/20/2017) // Lines, Parallel, Exterior < Theorem, & Midsegment Theorem Notes
 Parallel Lines - Revised
 p||q and t is the transversal.

<1 & <2 are adjacent which means $\angle 1 + \angle 2 = 180^\circ$
 <1 & <3 are vertical which means $\angle 1 = \angle 3$
 <3 & <5 are same side interior which means $\angle 3 + \angle 5 = 180^\circ$
 <1 & <6 are corresponding which means $\angle 1 = \angle 6$
 <8 & <1 are alternate exterior which means $\angle 1 = \angle 8$
 <4 & <5 are alternate interior which means $\angle 4 = \angle 5$

Examples:

Identify the type of angles shown, then find the measure of the angle indicated in bold.

1)
 corresponding $100 = 3x + 4$
 $3x + 4 = 100 - 4$
 $3x = 96$
 $x = 32$
 $3(32) + 4 = 100$

2)
 corresponding $2x = 12x - 6$
 $4 = 2x - \frac{1}{2}$
 $\frac{9}{2} = \frac{2x - \frac{1}{2}}{2}$
 $x = 3$

3)
 $11x - 1 = 9x + 13$

4)
 $14x - 1 = 11x + 8$

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Exterior Angle Theorem
An exterior angle of a triangle is equal to the sum of the two remote interior angles.

Examples: Find the measure of each angle indicated.

1) $\angle G + \angle H = \angle F$
 $95 + 44 + 15 = 16x + 2$
 $110 + 44 = 16x + 2$
 $154 = 16x + 2$
 $152 = 16x$
 $9.5 = x$

2) $\angle T + \angle U = \angle S$
 $71 + 48 = 145$
 $119 = 145 - 45$
 $119 = 100$

3) $3x - 7 + 12x + 12 = 140$
 $15x + 5 = 140$
 $15x = 135$
 $x = 9$

4) $14x + 4 + 144x = 115$
 $158x + 4 = 115$
 $158x = 111$
 $x = 0.7$

5) $34 + 9x - 10 = 25$
 $24 + 9x = 25$
 $9x = 1$
 $x = 0.1$

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Mid-segment Theorem
The mid-segment of a triangle (also called a midline) is a segment joining the midpoints of two sides of a triangle.

Examples: Find the missing length indicated.

1) Find FG
 $x - 6 = 2(x - 9)$
 $x - 6 = 2x - 18$
 $-x = -12$
 $x = 12$

2) Find EG
 $2x + 6 = 2(2x - 5)$
 $2x + 6 = 4x - 10$
 $+10 = +10$
 $16 = 2x$
 $8 = x$

3) Find AD
 $x + 24 = 2(x + 10)$
 $x + 24 = 2x + 20$
 $-x = -4$
 $x = 4$

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February 7, 2019 Thursday

Similar Triangles
State if the triangles in each pair are similar. If so, state how you know they are similar using AA, SAS, or SSS.

1) $\triangle PQR \sim \triangle STU$
 $\frac{4}{17} = \frac{23}{17}$

2) $\triangle CDE \sim \triangle GHI$
 $\frac{4}{20} = \frac{20}{40}$

3) $\triangle ABC \sim \triangle DEF$
 $\frac{42}{58} = \frac{21}{29}$

4) $\triangle RST \sim \triangle UVW$
 $\frac{12}{36} = \frac{42}{126}$

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February 8, 2019, Friday

Find the measure of each angle indicated.

1) $\angle E + \angle D = \angle F$
 $30 + \angle D = 115$
 $\angle D = 85$

3) Find VU
 $GE = 2VU$
 $6 = \frac{8VU}{2}$
 $3 = VU$

Find the measure of the angle indicated.

2) Find $m\angle T$
 $\angle U + \angle T = \angle V$
 $5x + 5 + 10x = 125$
 $15x + 5 = 125$
 $15x = 120$
 $x = 8$
 $m\angle T = 10x = 80$

4) $DF = 2KL$
 $x + 11 = 2(x + 7)$
 $x + 11 = 2x + 14$
 $-x = 3$
 $x = -3$

Feb 7-1:48 PM

Geometry Name: _____ ID: 1
 Exterior Angle Theorem for Triangles
 Find the measure of each angle indicated.

1) $\angle A = 100^\circ$

2) $\angle B = 110^\circ$

3) $\angle C = 100^\circ$

4) $\angle D = 110^\circ$

5) $\angle E = 110^\circ$

6) $\angle F = 110^\circ$

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7) $\angle A = 100^\circ$

8) $\angle B = 110^\circ$

9) Find $m\angle F$

10) Find $m\angle C$


11) Find $m\angle FSR$


12) Find $m\angle WCD$


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
Geometry _____ Name _____ ID: 1
 _____ Date _____ Period _____

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


1)  $\underline{\hspace{1cm}} \parallel MP$


2)  $\underline{\hspace{1cm}} \parallel MN$


3)  $\underline{\hspace{1cm}} \parallel NP$


4)  $\underline{\hspace{1cm}} \parallel MN$

Find the missing length indicated.

5) Find IX  $\underline{\hspace{1cm}}$

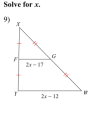
6) Find JK  $\underline{\hspace{1cm}}$

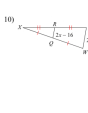
7) Find RT  $\underline{\hspace{1cm}}$


8) Find XY  $\underline{\hspace{1cm}}$


Feb 7-1:51 PM

Solve for x .


9)  $\underline{\hspace{1cm}}$


10)  $\underline{\hspace{1cm}}$


11)  $\underline{\hspace{1cm}}$


12)  $\underline{\hspace{1cm}}$

Find the missing length indicated.

13) Find BD  $\underline{\hspace{1cm}}$

14) Find XZ  $\underline{\hspace{1cm}}$


15) Find UV  $\underline{\hspace{1cm}}$

16) Find FE  $\underline{\hspace{1cm}}$

Feb 7-1:51 PM

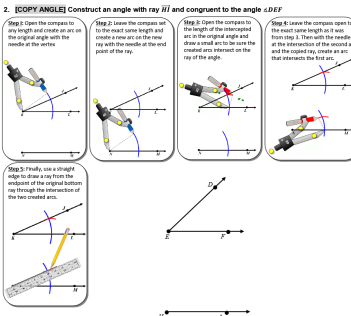
Sec 3.4 Geometry - Constructions

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."

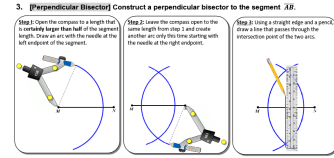
2. [COPY ANGLE] Construct an angle with ray HI and congruent to the angle $\angle DEF$.



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

Jan 31-8:25 AM

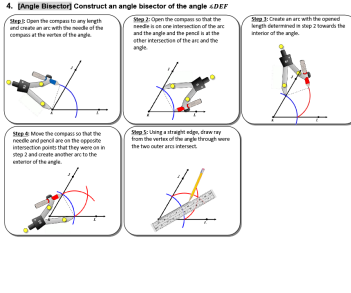
3. [PERPENDICULAR BISECTOR] Construct a perpendicular bisector to the segment AB .



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

Jan 31-8:26 AM

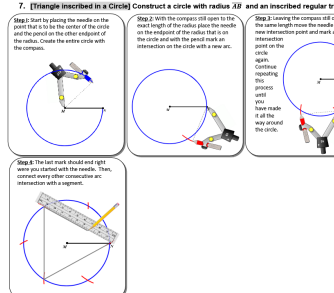
4. [ANGLE BISECTOR] Construct an angle bisector of the angle $\angle DEF$.



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

Jan 31-8:27 AM

7. [TRIANGLE INSCRIBED IN A CIRCLE] Construct a circle with radius XI and an inscribed regular triangle.



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

Jan 31-8:27 AM

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

Step 1: Start by placing the needle on the point P . It 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: Use your straight edge to create a diameter.

Step 3: Create a perpendicular bisector of the newly created diameter line (previous construction #5 if needed).

Step 4: Connect the each endpoint of the diameter with each endpoint of where the perpendicular bisector intersects the circle.

\overline{XP}

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

Step 1: Use a straight edge to draw the line that passes through point O and intersects line AB .

Step 2: Open the compass so that the needle is on the intersection of the transversal line and line AB . Then open the compass a little to make sure that the distance to each point C is greater than the distance to each point O . Create an arc as shown below.

Step 3: Open the compass so that the needle is on the intersection of the transversal line and line AB . Then open the compass a little to make sure that the distance to each point C is greater than the distance to each point O . Create an arc as shown below.

Step 4: Put the compass needle on the intersection of the transversal line and line AB that you created in the previous step and open the compass so that the intersection of the transversal line and the second arc that you created. Then, create an arc of the same radius to intersect the second arc as shown below.

Step 5: Connect the compass open to the same angle as the previous step and put the compass needle on the intersection of the transversal line and the second arc that you created. Then, create an arc of the same radius to intersect the second arc as shown below.

Step 6: Connect the two intersection points of the arcs to create the parallel line.

\overline{AB}

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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.mathoenref.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
- Supplementary 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