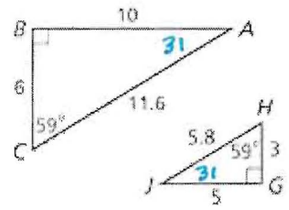
Geometry CC
Unit 1 Part 1 Test REVIEW

Name: KEY
Date: _____ Period: ____

Don't just stop at this review…Look over any notes and old reviews that you have to help prepare for the test

1. Identify the pairs of congruent angles and corresponding sides.



$\angle B \cong \angle G$
$\angle C \cong \angle H$
$\angle A \cong \angle J$

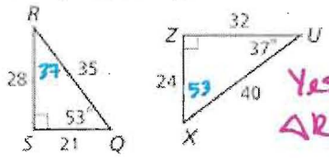
$\frac{CB}{HG} = \frac{6}{3} = 2$

$\frac{AB}{JG} = \frac{10}{5} = 2$

$\frac{CA}{HJ} = \frac{11.6}{5.8} = 2$

2. Determine whether the polygons are similar. If so, write the similarity ratio and a similarity statement.

a) $\triangle RSQ$ and $\triangle UXZ$



Yes, $\triangle RSQ \sim \triangle UZX$

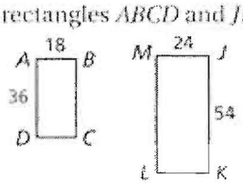
$\angle R \cong \angle U$
$\angle Q \cong \angle X$
$\angle S \cong \angle Z$

$\frac{SQ}{ZX} = \frac{21}{24} = \frac{7}{8}$

$\frac{SR}{ZU} = \frac{28}{32} = \frac{7}{8}$

$\frac{QR}{XU} = \frac{35}{40} = \frac{7}{8}$

b) rectangles $ABCD$ and $JKLM$



No, not similar

all $\angle$s are $90°$

$\frac{AB}{MJ} = \frac{18}{24} = \frac{3}{4}$

$\frac{AD}{JK} = \frac{36}{54} = \frac{2}{3}$

3. If the length of a race car is 5m and the width is 1.8m, find the length of a model race car if the width is 6.3 cm.

Race Car	1.8m
5m	

model	6.3cm
x	

$\frac{5}{x} = \frac{1.8}{6.3}$

$1.8x = 31.5$

$x = 17.5\text{cm}$

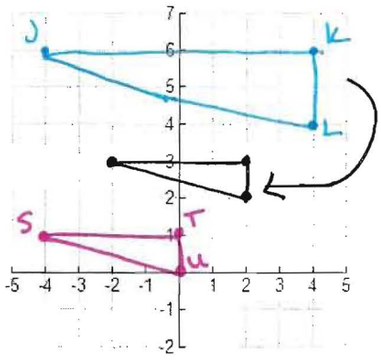
4. Name the dilation and then the translation that was used to map $J(-4,6), K(4,6), L(4,4)$ to $S(-4,1), T(0,1), U(0,0)$

↳ ÷ by 2

1st – $(x, y) \rightarrow (\frac{1}{2}x, \frac{1}{2}y)$

$(-2,3)(2,3)(2,2)$

2nd – $(x-2, y-2)$



5. Apply the dilation D to the polygon with the given vertices.

$D: (x, y) \rightarrow (0.75x, 0.75y)$
$E(-4,6), F(-2,-2), G(4,-2), H(4,4)$

$E'(-3, 4.5)$ $F'(-1.5, -1.5)$ $G'(3, -1.5)$ $H(3, 3)$

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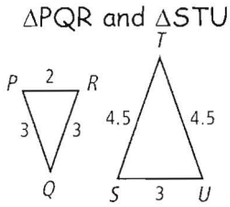
6. Verify that the triangles are similar

a) ΔPQR and ΔSTU



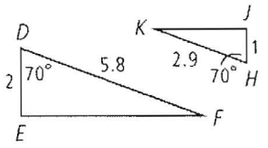
$\frac{PQ}{ST} = \frac{3}{4.5} = \frac{2}{3}$

$\frac{QR}{TU} = \frac{3}{4.5} = \frac{2}{3}$

$\frac{PR}{SU} = \frac{2}{3}$

$\Delta PQR \sim \Delta STU$ by SSS

b) ΔDEF and ΔHJK



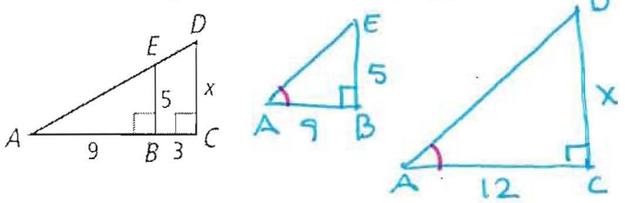
$\angle D \cong \angle H$

$\frac{DE}{HJ} = \frac{2}{1}$

$\frac{DF}{HK} = \frac{5.8}{2.9} = 2$

$\Delta DEF \sim \Delta HJK$ by SAS

7. Explain why $\Delta ABE \sim \Delta ACD$, and then find CD.



$\angle A \cong \angle A$

$\angle B \cong \angle C$

$\Delta ABE \sim \Delta ACD$ by AA.

$\frac{EB}{DC} = \frac{AB}{AC}$

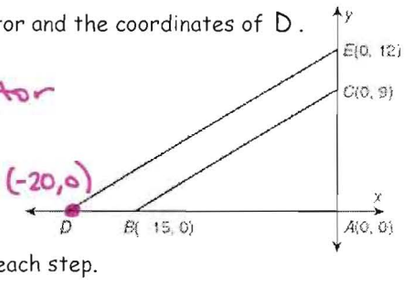
$\frac{5}{x} = \frac{9}{12}$

$9x = 60$

$x = 6.7$

8. Given that $\Delta ABC \sim \Delta ADE$, find the scale factor and the coordinates of D.

$\frac{AE}{AC} = \frac{12}{9} = \frac{4}{3}$ scale factor



9. Solve each question. Write a justification for each step.

a) $\frac{n}{6} - 3 = 10$

$+3 \quad +3$ Addition POE

$6 \cdot \frac{n}{6} = 13 \cdot 6$ Mult POE

$n = 78$

b) $\frac{4(t-3)}{4} = \frac{-20}{4}$ Division POE

$t - 3 = -5$ Addition POE

$+3 \quad +3$

$t = -2$

10. Use the given information and the theorems you have learned to show that $r \parallel s$.

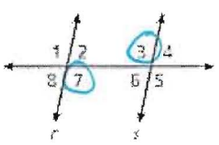
$m\angle 3 = 2x°$

$m\angle 7 = (x + 50)°$

$x = 50$

$m\angle 3 = 2(50) = 100°$

$m\angle 7 = 50 + 50 = 100°$



Converse Alt. Int. $\angle$s

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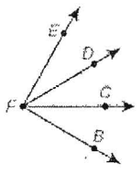
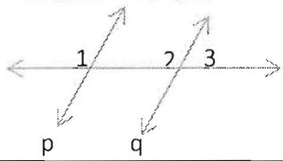
11. **Given:** $\overline{FD}$ bisects $\angle EFC$.
$\overline{FC}$ bisects $\angle DFB$.
Prove: $\angle EFD \cong \angle CFB$



Proof:

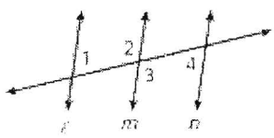
1. $\overline{FD}$ bisects $\angle EFC$, $\overline{FC}$ bisects $\angle DFB$.	1. Given
2. $\angle EFD \cong \angle DFC$, $\angle DFC \cong \angle CFB$	2. Def. of $\angle$ bisector
3. $m\angle EFD = m\angle DFC$, $m\angle DFC = m\angle CFB$	3. Def. of $\cong$ $\angle$s.
4. $m\angle EFD = m\angle CFB$	4. Transitive POE
5. $\angle EFD \cong \angle CFB$	5. Def. of $\cong$ $\angle$s.

12. **Given:** $p \parallel q$
Prove: $m\angle 1 + m\angle 3 = 180°$
Proof:



Statements	Reasons
1. $p \parallel q$	1. Given
2. a. $\angle 2 + \angle 3 = 180°$	2. Lin. Pair Thm.
3. $\angle 1 \cong \angle 2$	3. b. Corresponding $\angle$s.
4. c. $\angle 1 = \angle 2$	4. Def. of $\cong$ $\angle$s
5. d. $m\angle 1 + m\angle 3 = 180°$	5. e. Substitution

13. Given: $\angle 1 \cong \angle 4$. $\angle 3$ and $\angle 4$ are supplementary.
Prove: $\ell \parallel m$



Statements	Reasons
1. $\angle 1 \cong \angle 4$	Given
2. $m\angle 1 = m\angle 4$	Def. of $\cong$ $\angle$s
3. $\angle 3$ and $\angle 4$ are supplementary	Given
4. $\angle 3 + \angle 4 = 180°$	Def. of supp $\angle$s
5. $\angle 3 + \angle 1 = 180°$	Substitution
6. $m\angle 2 = m\angle 3$	vertical $\angle$s
7. $\angle 2 + \angle 1 = 180°$	Substitution
8. $l \parallel m$	Con. Same-Side Int. $\angle$s.