Review Guide for Unit 7 Test Name: KEY

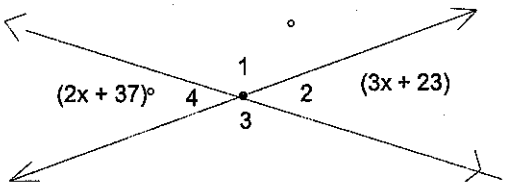
Basic Vocab Review

1. Complement & Supplement

Measure of Given Angle	Measure of Complement	Measure of Supplement
13°	77°	167°

2. Vertical Angles

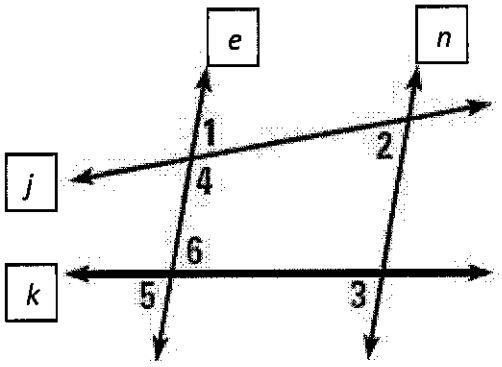
x = 14
m∠1 = 115°
m∠2 = 65°
m∠3 = 115°
m∠4 = 65°



3. Name a pair of angles.
Alternate Exterior _____ Same Side Interior ∠2, ∠4 Alternate Interior ∠1, ∠2
Corresponding, ∠3, ∠5

4. If m∠2 + m∠4 = 180°, then lines e, n are parallel, the transversal is line j and

5. the angle relationship is consecutive interior (same side)



$2x+37 = 3x+23$
$-2x \quad -2x$
$37 = x+23$
$-23 \quad -23$
$14 = x$

$2(14)+37 = 65$

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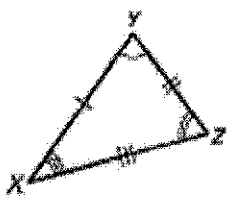
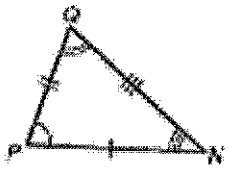
Congruent Triangles Review

6. **Given: $\triangle XYZ \cong \triangle NPQ$. Identify the congruent corresponding parts.**





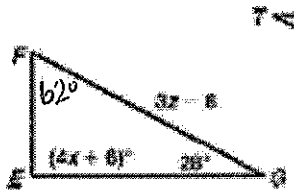
1. $\angle Z \cong$ $\angle Q$ 2. $\overline{YZ} \cong$ $\overline{PQ}$

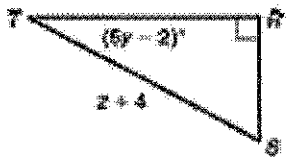
3. $\angle P \cong$ $\angle Y$ 4. $\angle X \cong$ $\angle N$

5. $\overline{NQ} \cong$ $\overline{XZ}$ 6. $\overline{PN} \cong$ $\overline{YX}$

7. **Given: $\triangle EFG \cong \triangle RST$. Find each value below.**

$4x+6=90$
$4x=84$
$x=21$





$5y-2=28$
$5y=30$
$y=6$

7. $x =$ 21 8. $y =$ 6

9. $m\angle F =$ $62°$ 10. $ST =$ 10

$3z-8=z+4$
$2z-8=4$
$2z=12$
$z=6$

8. **Given: $\triangle CDE \cong \triangle HIJ$, $m\angle D = (5y + 1)°$, and $m\angle I = (6y - 25)°$. Find y and $m\angle D$.**

$5y+1=6y-25$
$1=y-25$
$26=y$

$5(26)+1$
$130+1$
$m\angle D = 131$

9. **Given: $\triangle CDE \cong \triangle HIJ$, $DE = 9x$, and $IJ = 7x + 3$. Find x and DE.**

$9x=7x+3$
$2x=3$
$x=\frac{3}{2}$

$9\left(\frac{3}{2}\right) = \frac{27}{2} = DE$

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Congruent Triangles Review Cont'd (Proofs)

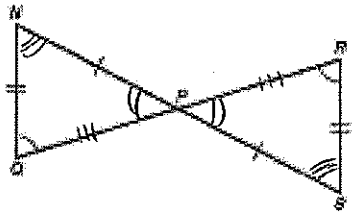
11. Complete the proof.

Given: $\angle Q \cong \angle R$

P is the midpoint of $\overline{QR}$.

$\overline{NQ} \cong \overline{SR}, \overline{NP} \cong \overline{SP}$

Prove: $\triangle NPQ \cong \triangle SPR$



Proof:

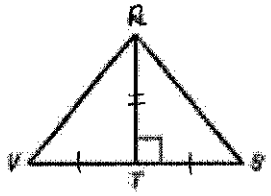
Statements	Reasons
1. $\angle Q \cong \angle R$	1. Given
2. $\angle NPQ \cong \angle SPR$	2. a. Vert ∠'s
3. $\angle N \cong \angle S$	3. b. Third ∠ Thm
4. P is the midpoint of $\overline{QR}$.	4. c. Given
5. d. $\overline{QP} \cong \overline{RP}$	5. Def. of mdpt.
6. $\overline{NQ} \cong \overline{SR}, \overline{NP} \cong \overline{SP}$	6. e. Given
7. $\triangle NPQ \cong \triangle SPR$	7. f. Can use any of the 5 postulates except HL

6. Complete the proof.

Given: T is the midpoint of $\overline{VS}$.

$\overline{RT} \perp \overline{VS}$

Prove: $\triangle RST \cong \triangle RVT$



Statements	Reasons
1. T is the midpoint of $\overline{VS}$.	1. Given
2. a. $\overline{VT} \cong \overline{ST}$	2. Def. of mdpt.
3. $\overline{RT} \perp \overline{VS}$	3. b. Given
4. ∠RTS and ∠RTV are right ∠'s	4. c. def of ⊥ lines
5. d. ∠RTS ≅ ∠RTV	5. Rt. ∠ ≅ Thm.
6. $\overline{RT} \cong \overline{RT}$	6. e. Reflexive Prop.
7. $\triangle RST \cong \triangle RVT$	7. f. SAS

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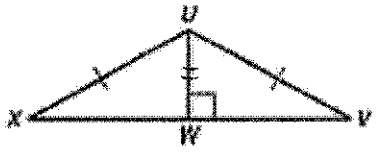
2. **Given:** $\triangle UXW$ and $\triangle UVW$ are right $\triangle$s.
$\overline{UX} \cong \overline{UV}$
Prove: $\angle X \cong \angle V$
Proof:



Statements	Reasons
1. $\triangle UXW$ and $\triangle UVW$ are rt. $\triangle$s.	1. Given
2. $\overline{UX} \cong \overline{UV}$	2. a. Given
3. $\overline{UW} \cong \overline{UW}$	3. b. Reflexive Prop.
4. c. $\triangle UXW \cong \triangle UVW$	4. d. HL
5. $\angle X \cong \angle V$	5. e. CPCTC

Dilations and Midsegment Review:

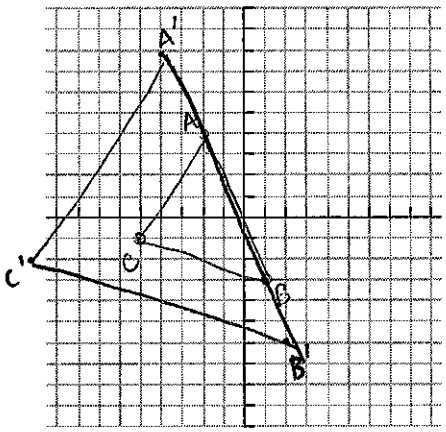
13. Plot the following points A(-2, 4), B (1, -3), and C(-5, -1).

Draw the image after it has been dilated by a scale factor of k=2

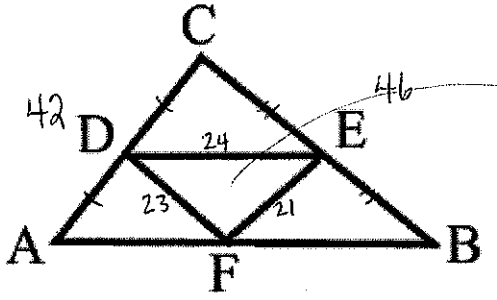
A′ = $(-4, 8)$

B′ = $(2, -6)$

C′ = $(-10, -2)$



14. Given $AC = 42$, $CB = 46$, $AB = 48$. D, E, F are midpoints.
Find the perimeter of triangle DEF.



46 → These sides are half of the others because of mid-segment theorem

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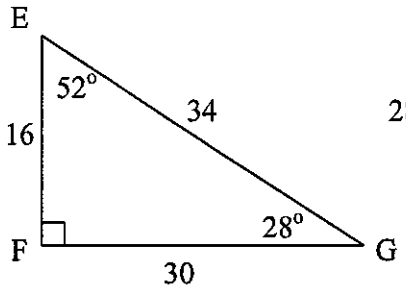
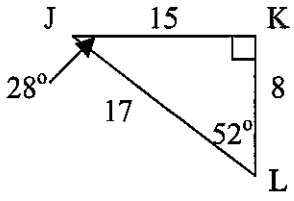
Similar Triangles Review:

Tell if the figures are similar. If they are, write a similarity postulate and statement using the symbol for similar, ~, and give the scale factor from the smaller polygon to the larger one. If they are not similar, explain why.

15.



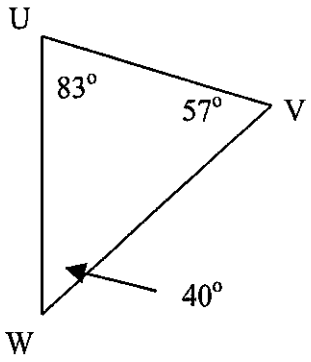


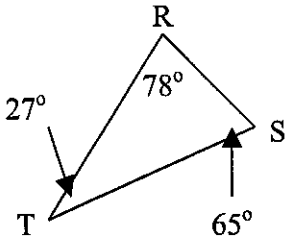
YES, AA, SSS, or SAS

$\triangle EFG \sim \triangle LKJ$

$\frac{30}{15} = 2$ $\frac{16}{8} = 2$ $\frac{34}{17} = 2$

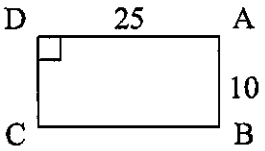
16.

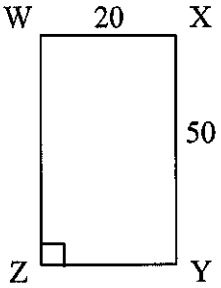




Not Similar

17.





$\frac{50}{25} = 2$ $\frac{20}{10} = 2$

YES, SAS

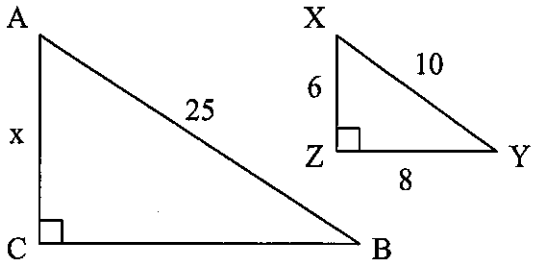
$\triangle ABCD \sim \triangle XWZY$

18. Suppose $\Delta CAN \sim \Delta JOY$. If $m\angle A = 96°$, $m\angle N = 46°$ and $m\angle C = 38°$, then

$m\angle Y =$ 46°, $m\angle J =$ 38° and $m\angle O =$ 96°.

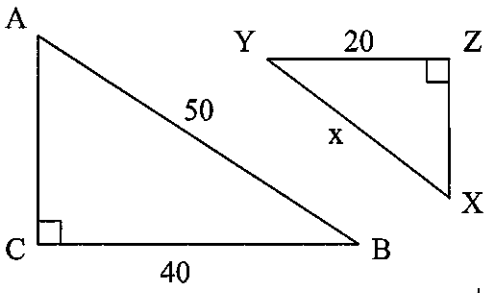
Find the missing side lengths in each pair of similar figures.

19. $\Delta ABC \sim \Delta XYZ$



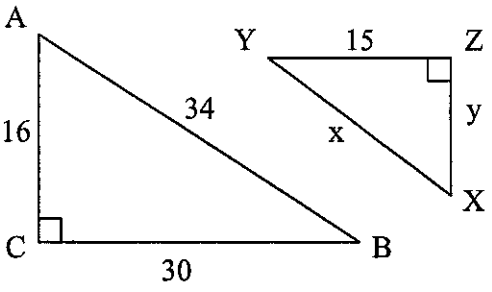
$\frac{x}{6} = \frac{25}{10}$ $\quad \frac{10x}{10} = \frac{150}{10}$ $\quad x = 15$

20. $\Delta ABC \sim \Delta XYZ$



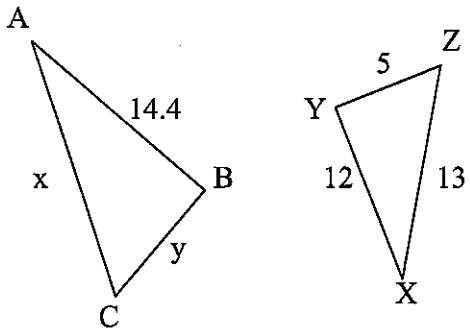
$\frac{40}{20} = \frac{50}{x}$ $\quad \frac{40x}{40} = \frac{1000}{40}$ $\quad x = 25$

21. $\Delta ABC \sim \Delta XYZ$



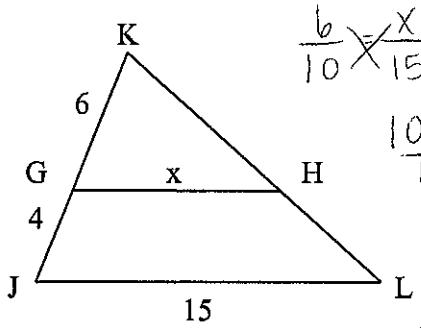
$\frac{16}{8} = \frac{34}{x}$ $\quad \frac{16x}{16} = \frac{272}{16}$ $\quad x = 17$ $\quad \frac{16}{y} = \frac{30}{15}$ $\quad \frac{30y}{30} = \frac{240}{30}$ $\quad y = 8$

22. $\Delta ABC \sim \Delta XYZ$



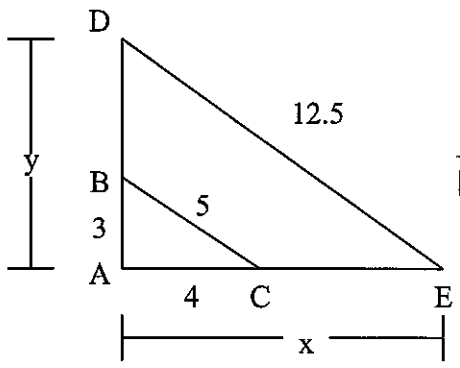
$\frac{14.4}{12} = \frac{x}{13}$ $\quad \frac{12x}{12} = \frac{187.2}{12}$ $\quad x = 15.6$ $\quad \frac{14.4}{12} = \frac{y}{5}$ $\quad \frac{12y}{12} = \frac{72}{12}$ $\quad y = 6$

23. $\Delta JKL \sim \Delta GKH$



$\frac{6}{10} = \frac{x}{15}$ $\quad \frac{10x}{10} = \frac{90}{10}$ $\quad x = 9$

24. $\Delta ABC \sim \Delta ADE$



$\frac{5}{12.5} = \frac{4}{x}$ $\quad \frac{5x}{5} = \frac{50}{5}$ $\quad x = 10$ $\quad \frac{5}{12.5} = \frac{3}{y}$ $\quad \frac{5y}{5} = \frac{37.5}{5}$ $\quad y = 7.5$