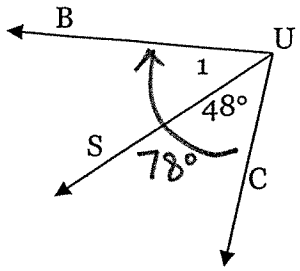
Final Review part #3 Name: Key

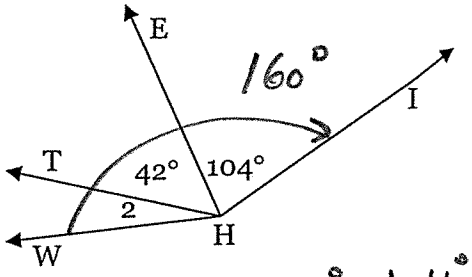
1. Using angle addition, solve for x and then find the measure of $\angle ABC$.

a. Find m∠1 if m∠CUB = 78. b. Find m∠2 if m∠WHI = 160.



$m\angle 1 = 78 - 48°$

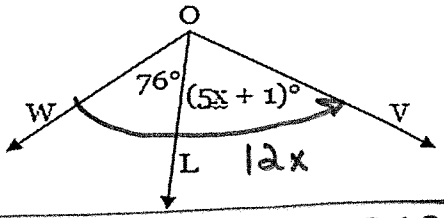
$m\angle 1 = 30°$



$m\angle 2 = 160° - 104° - 42$

$m\angle 2 = 14°$

2. m∠WOV = 12x. Find m∠LOV.



$12x = 76 + 5x + 1$

$12x = 5x + 77$

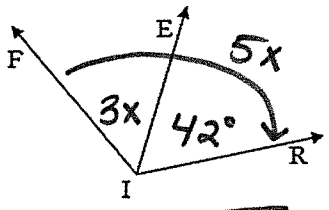
$-5x \quad -5x$

$7x = 77$ $x = 11$

$m\angle LOV = 5(11) + 1 = 56°$

3. m∠FIE = 3x, m∠RIE = 42°, m∠FIR = 5x

Find m∠FIR.



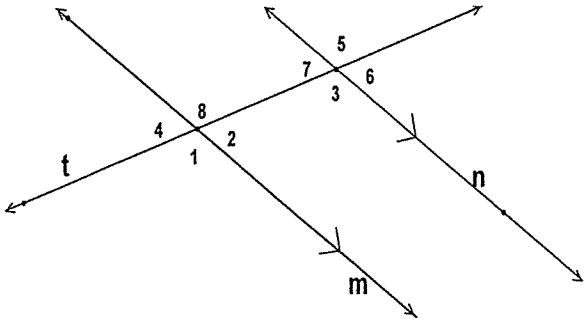
$5x = 3x + 42$

$-3x \quad -3x$

$\frac{2x}{2} = \frac{42}{2}$ $x = 21$

$m\angle FIR = 5(21) = 105°$

4.



Prove: $\angle 1 \cong \angle 5$

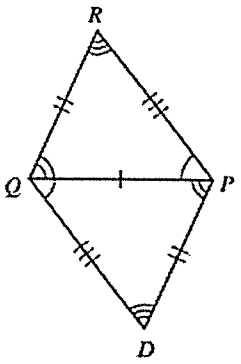
Statement	Justification
$m \parallel n$	22. ? Given
$\angle 8 \cong \angle 5$	23. ? Corresponding
$\angle 1 \cong \angle 8$	24. ? Vertical
$\angle 1 \cong \angle 5$	25. ? Substitute (replace)

5. List the congruency reasons that are reasonable.

SSS, SAS, AAS, ASA, HL

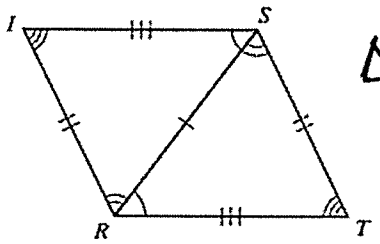
6. Write a **congruency statement** and a **reason** for each one of the below images:

9)



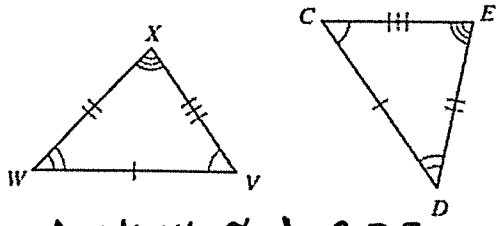
$\Delta QRP \cong \Delta PDQ$

10)



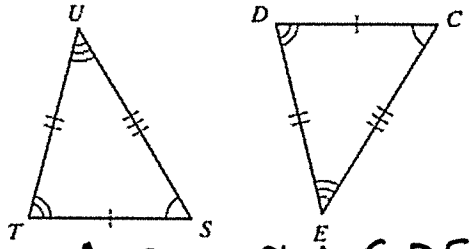
$\Delta RSI \cong \Delta SRT$

11)



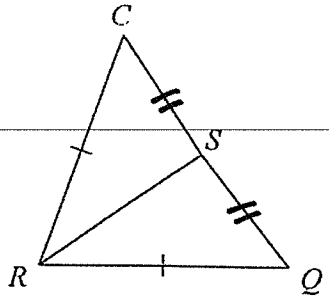
$\Delta VWX \cong \Delta CDE$

12)



$\Delta STU \cong \Delta CDE$

7. What additional information is needed to prove the triangles are congruent by SSS?



Already have:

$RC \cong RQ$ Given

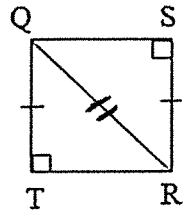
$RS \cong RS$ Common side

** Need:

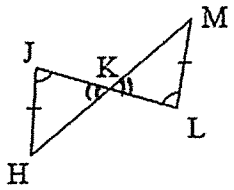
$CS \cong QS$

8. For each question choose one of the following theorems/postulates that show the triangles

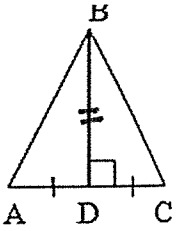
A. SSS B. SAS ~~C. ASS~~ HL D. ASA E. AAS F. Not Possible

2. 

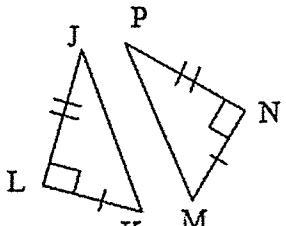
HL

3. 

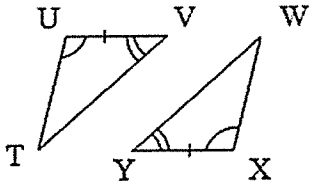
AAS

4. 

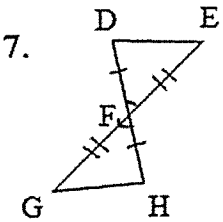
SAS

5. 

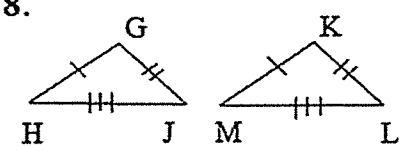
SAS

6. 

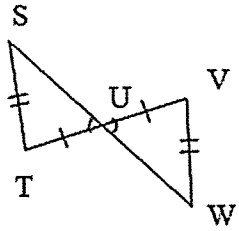
ASA

7. 

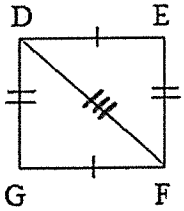
SAS

8. 

SSS

9. 

Not possible

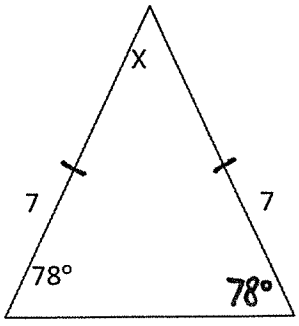
10. 

SSS

9. Find the angle measure for ***x*** in the isosceles triangles shown below.

What is the measure of <X?

a. 24°
b. 102°
c. 78°
d. 12°

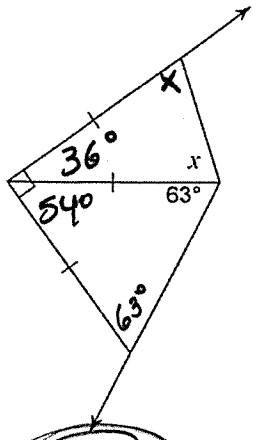


$X + 78° + 78° = 180°$

$X + 156° = 180°$

$-156° \quad -156°$

$X = 24°$



A) 72° B) 55°
C) 63° D) 53°

$180° - 63 + 63 = 54°$

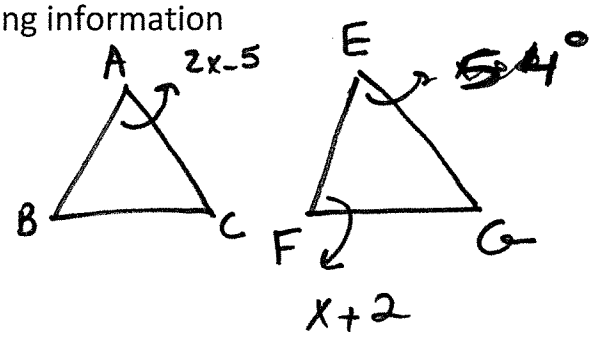
$90 - 54° = 36°$

$36° + 2x = 180°$
$-36° \quad -36°$

$\frac{2x}{2} = \frac{144}{2}$ $x = 72°$

10. Given that $\Delta ABC \cong \Delta EFG$, find ***x*** from the following information

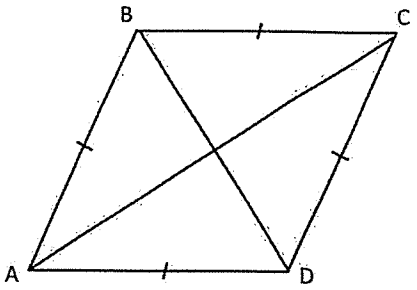
$m\angle A = 2x-5$ $m\angle F = x+2$ $m\angle E = 54°$

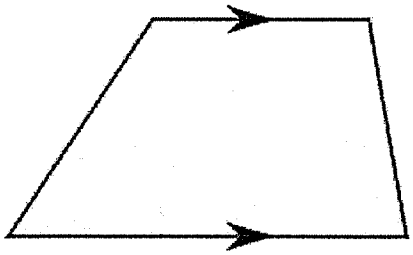


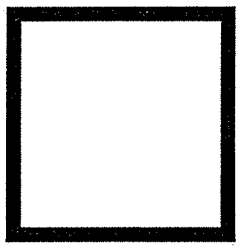
$2x - 5 = 54°$

$\frac{2x}{2} = \frac{59°}{2}$ $x = 29.5°$

11. Name the quadrilateral that best fits the given shape.



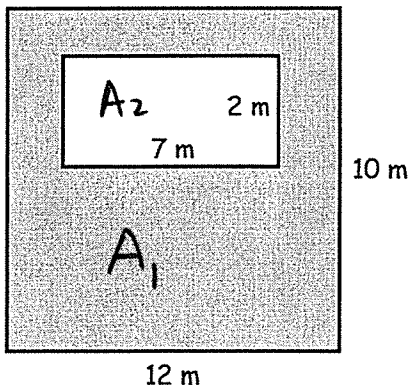




Rhombus Trapezoid Square.

12.

a. The rectangular floor in Moe's living room is 10 meter by 12 meter. A rectangular rug is placed in the side of the room. What is the room without the rugged area?



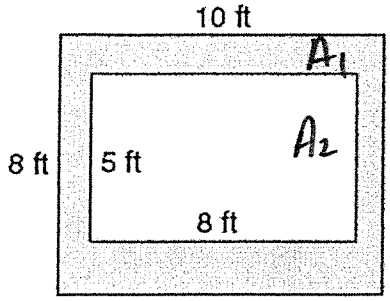
$A_1 = 12 \times 10 = 120 m^2$

$A_2 = 7 \times 2 = 14 m^2$

$A = A_1 - A_2 = 120 - 14$

$A = 106 m^2$

b. Find the area shaded part of the shape

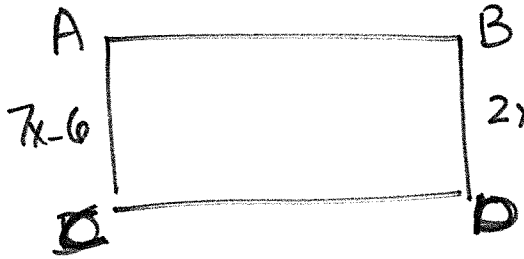


$A_1 = 10 \times 8 = 80\ ft^2$

$A_2 = 5 \times 8 = 40\ ft^2$

$A = A_1 - A_2 = 80 - 40 = 40\ ft^2$

13. ABCD is a rectangle. AC=7x-6 and BD=2x+14. Find the length of AC



$7x - 6 = 2x + 14$

$-2x \quad -2x$

$5x - 6 = 14$

$5x = 20$

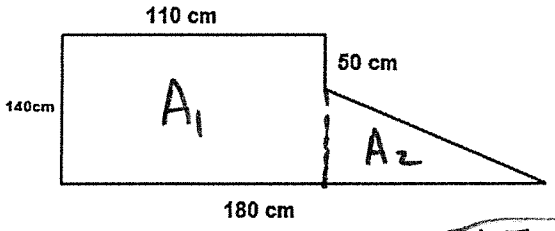
$x = 4$

$AC = 7(4) - 6 = 22$

AC=22

14. Find the area of the following figures.

a.



$A_1 = 140 \times 110 = 15400\ cm^2$

$A_2 = \frac{1}{2} b.h = \frac{1}{2} 70 . 90$

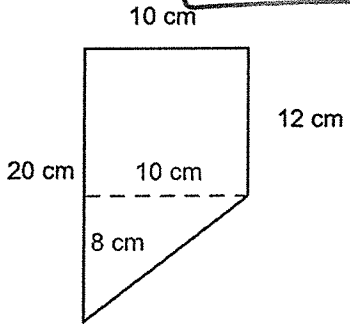
$b = 180 - 110 = 70\ cm$

$h = 140 - 50 = 90 cm$

$A_2 = 3150\ cm^2$

$A = 15400 + 3150 = 18550\ cm^2$

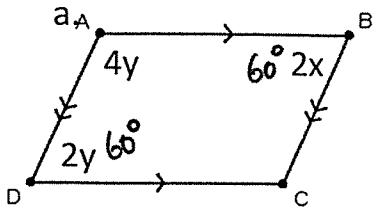
b.



15. Give 4 characteristics of a parallelogram

1- opposite sides are Congruent
2- opposite angle are Congruent
3- Consecutive angles are ~~Congruent~~ Supplementary.
4-

16. What is the value of x in the parallelogram?

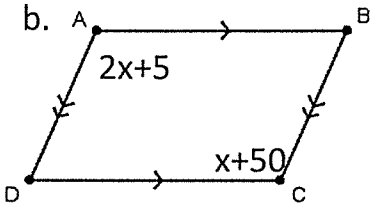
a. 

$4y+2y=180°$

$6y=180°$

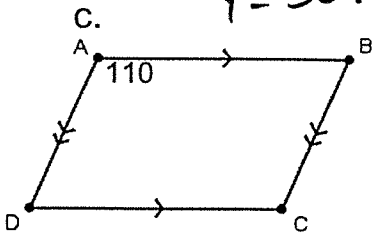
$y=30°$

$x=30°$

b. 

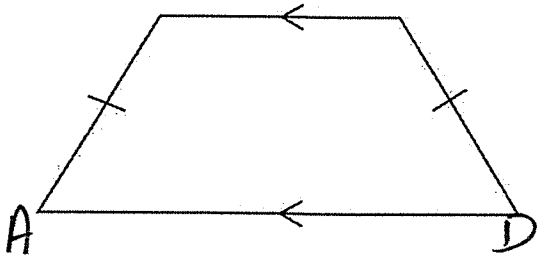
$2x+5=x+50$

$x=45$

c. 

Find the rest of the angles

$\angle C=110°$, $\angle B=70°$, $\angle D=70°$

17. 

What is this a picture of? isosceles trapezoid

$\angle A$ and $\angle D$ are base angles of the given picture. If $m\angle A=5x+1$ and $m\angle D=10x-14$, find the value of x.

$5x+1=10x-14$

$\frac{5x}{5}=\frac{15}{5}$

$x=3$

18. True or False

T 1. A rhombus is a quadrilateral.

T 2. A rectangle is sometimes a square

F 3. A rhombus is always a square

F 4. If a quadrilateral is a rectangle then it is also a square.

F 5. If a quadrilateral is a rhombus then it is also a square.

F 6. If a quadrilateral is a parallelogram then it is also a rhombus.

T 7. If a quadrilateral is a square then it is also a parallelogram.

T 8. An isosceles trapezoid has two equal angles.

F 9. A rectangle is an isosceles trapezoid.

T 10. A quadrilateral with four congruent sides is a square.

T 11. A quadrilateral with four right angles is a rectangle.

F 12. A trapezoid has two pairs of parallel sides.

T 13. A rectangle has congruent opposite sides.

F 14. A parallelogram has one pair of parallel sides.

F 15. A parallelogram always has four congruent sides.