SKILLS

Name the property that justifies each statement.

1) If x + 3 = 10, then x = 7.

2) If 3(2x - 10) = 11, then 6x - 30 = 11.

3) If 12 - x = y, then y = 12 - x.

4) AB = AB.

5) If AB = 2x + 12 and x = 3, then AB = 2(3) + 12.

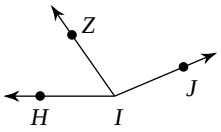
6) If 3x + 4x = 14, then 7x = 14.

7) If $\frac{1}{2}$x = 10, then x = 20.

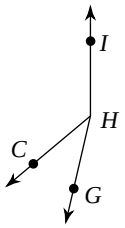
8) If Sully is cooler than Brust, and Brust is cooler than Kelly, then Sully is cooler than Kelly.

Find the measure of the given angle.

9) $m\angle HIZ = 4x + 7$, $m\angle HIJ = 12x + 13$, and $m\angle ZIJ = 102°$. Find $m\angle HIJ$.

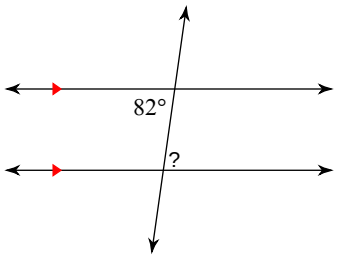


10) Find $m\angle GHC$ if $m\angle GHI = 167°$ and $m\angle CHI = 130°$.

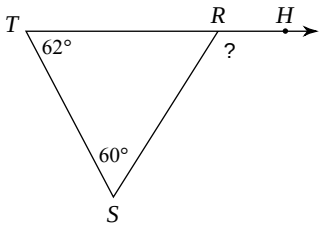


Find the measure of each angle indicated.

11)

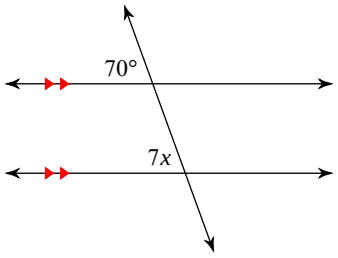


12)

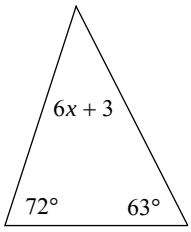


Solve for *x*.

13)



14)



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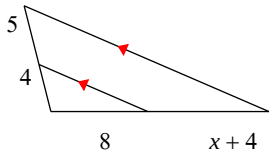

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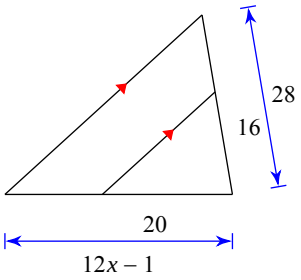

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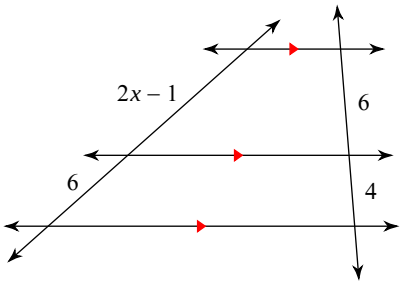
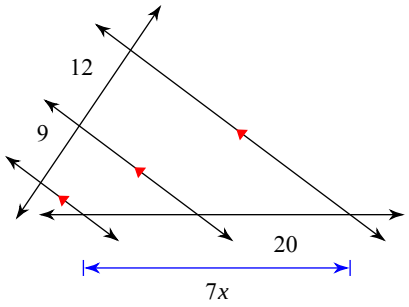
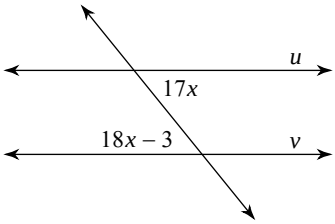


18)



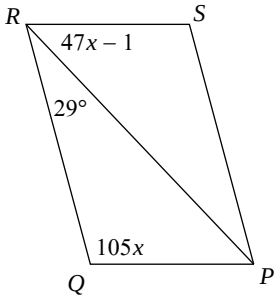
Find the value of *x* that makes lines u and v parallel.

19)

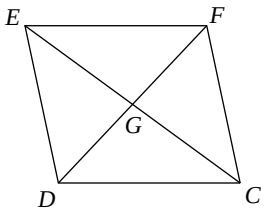


Find the measurement indicated in each parallelogram.

20) Find $m\angle Q$

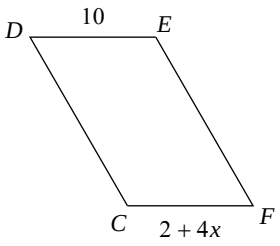


21) $DG = 4x + 3$
$DF = 12x - 2$
Find DF

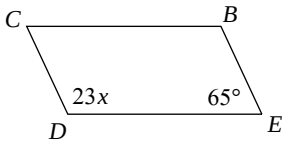


Solve for *x*. Each figure is a parallelogram.

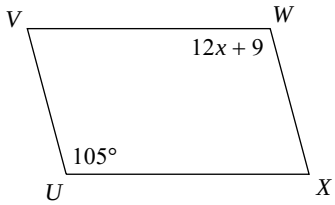
22)



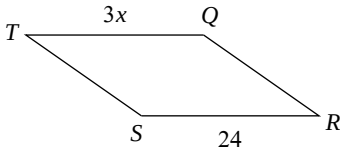
23)



24)

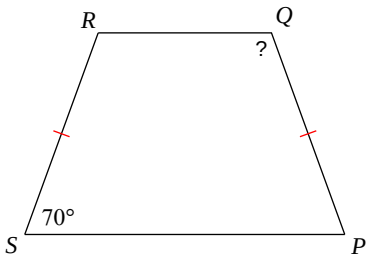


25)



Find the measurement of the angle indicated for each trapezoid.

26)



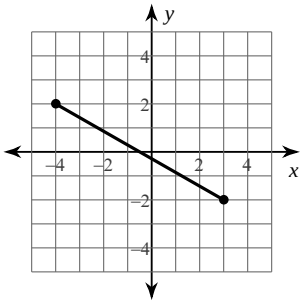
Write the slope-intercept form of the equation with the given information.

27) through: $(-1, 4)$ and $(-4, 1)$

Find the midpoint and distance between each pair of points.

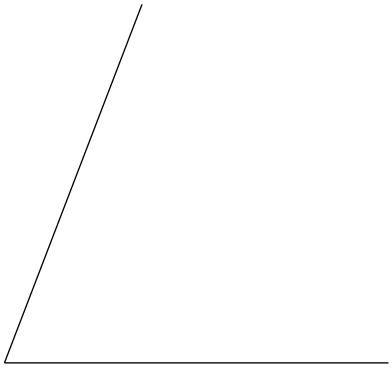
28) $(-5, -4)$, $(-1, -8)$

29)

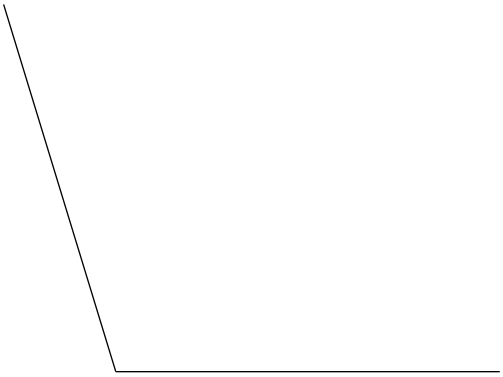


Find the measure of each angle to the nearest degree. Classify the angle as obtuse, acute, straight, or right.

30)

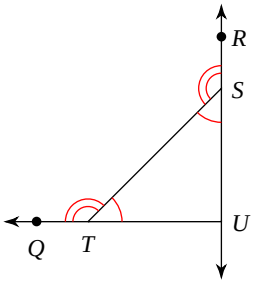


31)

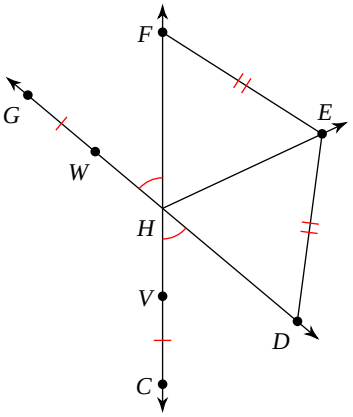


List all information given by the marks on the diagram.

32)

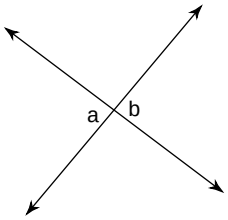


33)

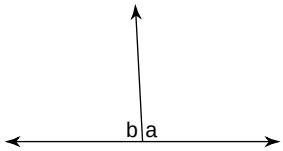


Name the relationship: complementary, linear pair, or vertical.

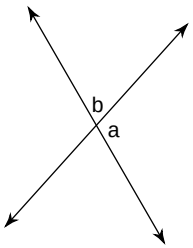
34)



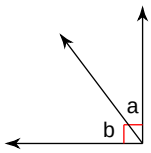
35)



36)

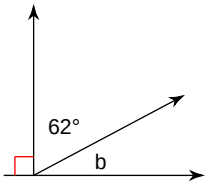


37)

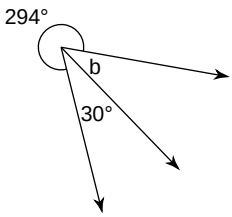


Find the measure of angle b.

38)

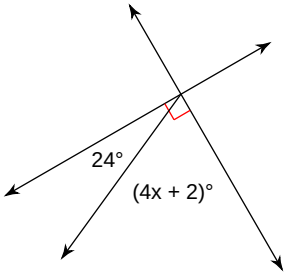


39)

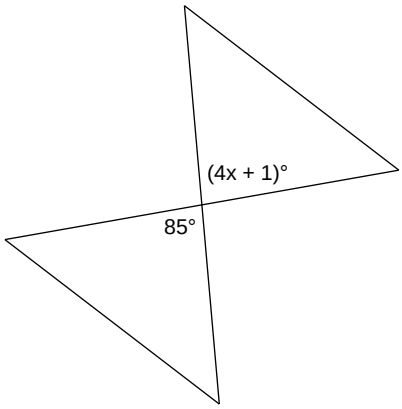


Find the value of x.

40)

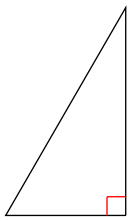


41)

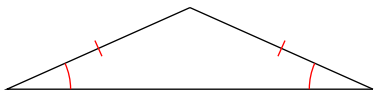


Classify each triangle by its sides (scalene, isosceles, or equilateral) as well as by its angles (acute, obtuse, or right).

42)

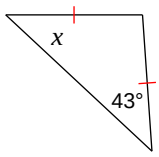


43)

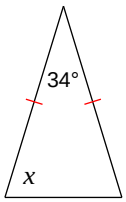


Find the value of *x*.

44)

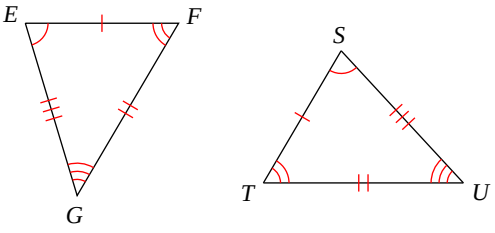


45)

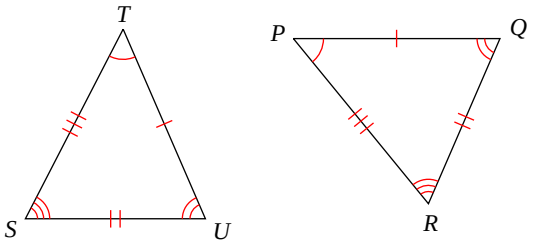


Write a statement that indicates that the triangles in each pair are congruent.

46)

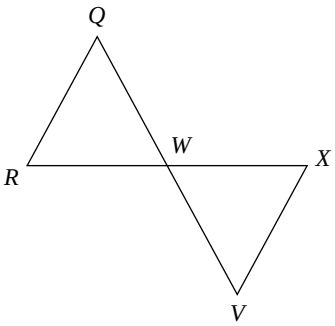


47)

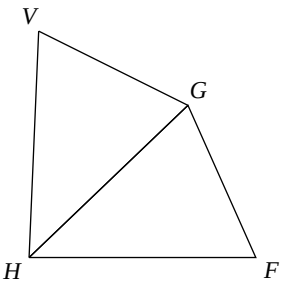


Mark the angles and sides of each pair of triangles to indicate that they are congruent.

48) $\Delta WXV \cong \Delta WRQ$



49) $\Delta HGF \cong \Delta HGV$



Complete each congruence statement by naming the corresponding angle or side.

50) $\Delta FGH \cong \Delta JKL$

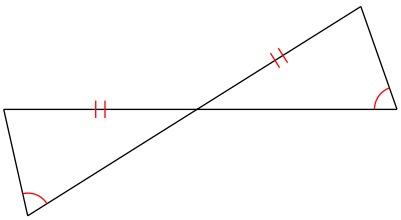
$\angle H \cong ?$

51) $\Delta DFE \cong \Delta XYZ$

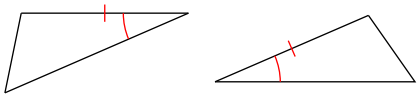
$\overline{ED} \cong ?$

State if the two triangles are congruent. If they are, state how you know.

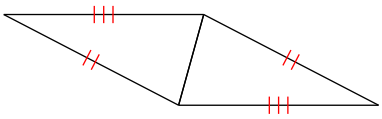
52)



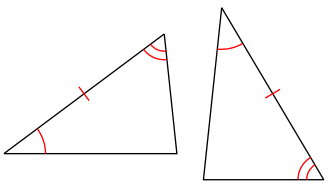
53)

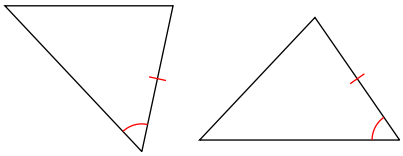


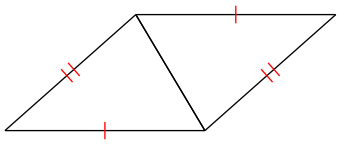
54)

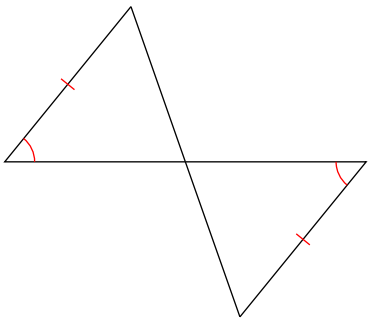


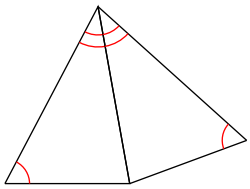
55)

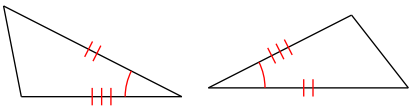


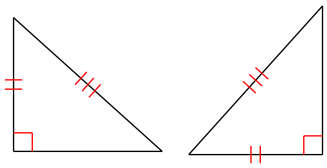
56) 

57) 

58) 

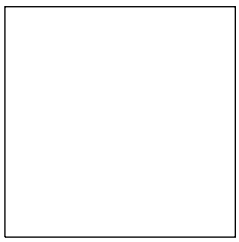
59) 

60) 

61) 

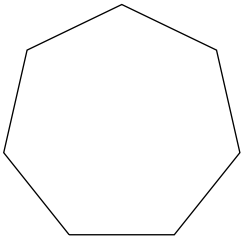
Find the measure of one exterior angle in each regular polygon. Round your answer to the nearest tenth if necessary.

62) regular dodecagon

63) 

Find the measure of one interior angle in each polygon. Round your answer to the nearest tenth if necessary.

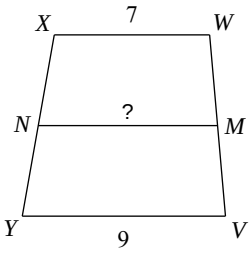
64)



65) regular 21-gon

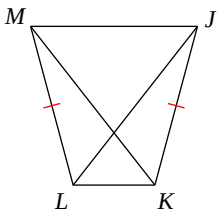
Find the length of the midsegment of each trapezoid.

66)

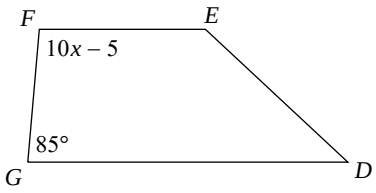


Solve for *x*. Each figure is a trapezoid.

67) $KM = 19$
$JL = 6x - 11$

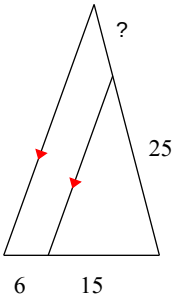


68)



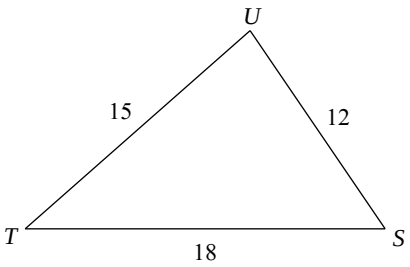
Find the missing length indicated.

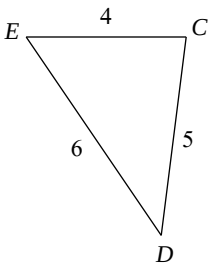
69)



The following triangles are similar. Fill in the blank (order is important). Find the scale factor.

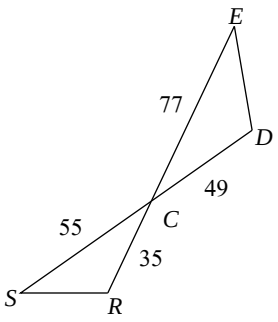
70)





$\Delta UTS \sim$ _____

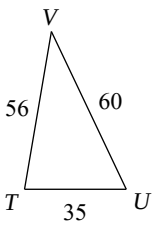
71)

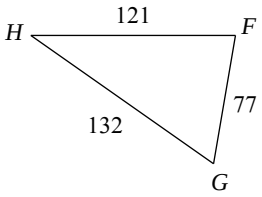


$\Delta CDE \sim$ _____

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

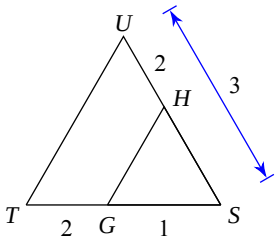
72)





$\Delta HGF \sim$ _____

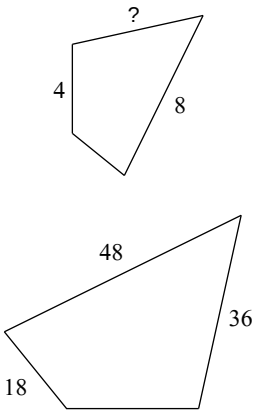
73)



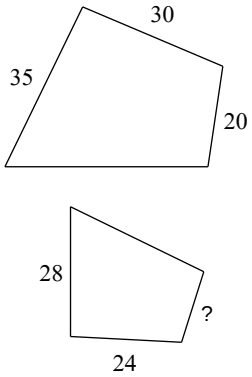
$\Delta STU \sim$ _____

The polygons in each pair are similar. Find the missing side length.

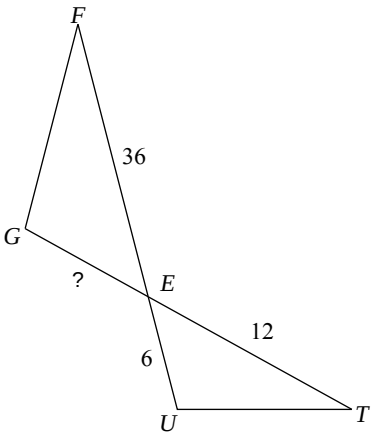
74)



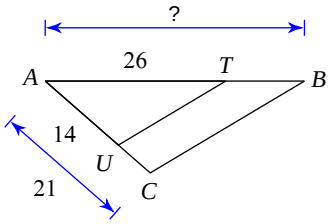
75)



76)

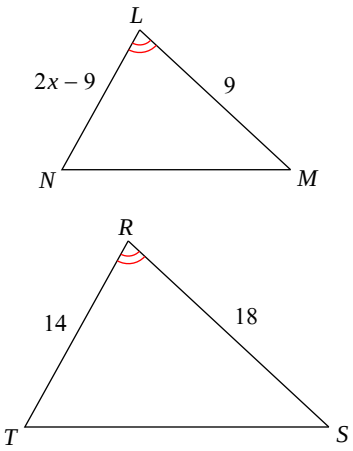


77)

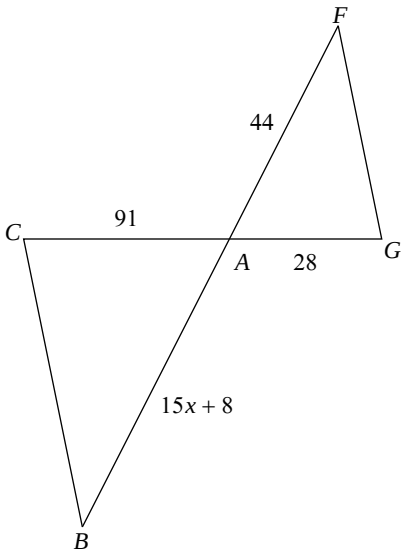


Solve for *x*. The triangles in each pair are similar.

78)

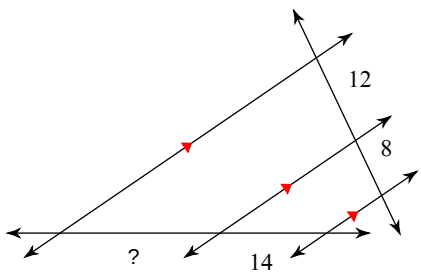


79)



Find the missing length indicated.

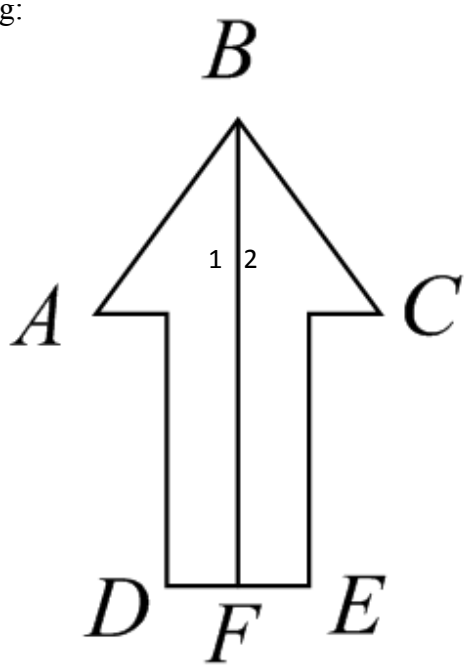
80)



Geometry Semester 1 Exam Review Applications

UNIT 1: Tools for Geometry

1. Mr.Kelly is really good at flow charts. Help him answer the following:



Mark the picture with the following.

a. $\overline{AB} \cong \overline{BC}$

b. $\overline{BF}$ is the angle bisector of $\angle ABC$

c. $\angle BFD$ is a right angle

d. F is the midpoint of $\overline{DE}$

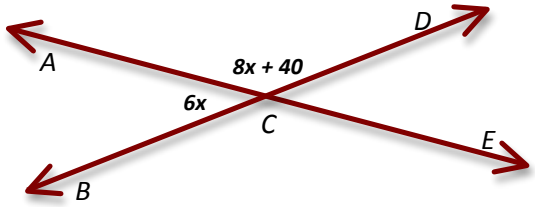
Use the info to find the following.

e. Use letters to name $\angle 1$.

f. Given $AB = 5x + 3$ and $BC = 3x + 13$, find x and AB

UNIT 2: Reasoning and Proof

2. Use the diagram to complete the proof that $m\angle ACD = 130$ by filling in the missing steps.



Statements	*Reasons*
A. $m\angle ACB = 6x;\ m\angle ACD = 8x + 40$	A. Given
B. $m\angle ACB + m\angle ACD = 180$	B. Linear Pairs are Supplementary
C. $6x + 8x + 40 = 180$	C. _____
D. $14x + 40 = 180$	D. _____
E. $14x = 140$	E. Subtraction Property of Equality
F. $x = 10$	F. _____
G. $m\angle BCE = 8(10) + 40 = 120$	G. _____

UNIT 3: Parallel Lines

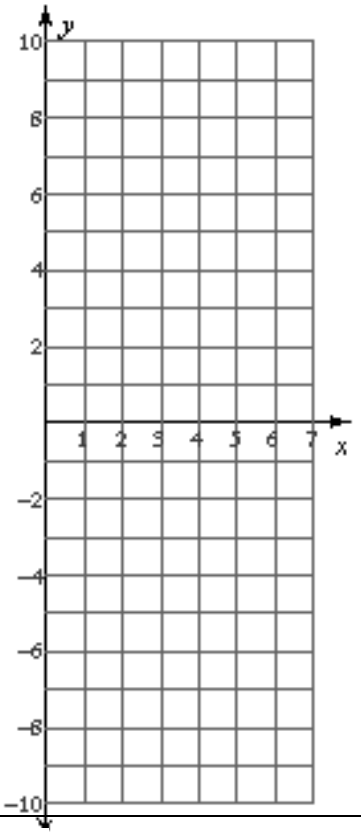
3. Mr. Kelly is trying to make some cash for his favorite hobby, collecting Barbie dolls. After one week he still owes his wife one dollar but after three weeks he has now five dollars.

   a) What's Mr. Kelly's slope (rate of change) for this situation?

   b) What's Mr. Kelly's y-intercept (initial value) for this situation?

   c) Write an equation of the line for the given situation. Graph the line.

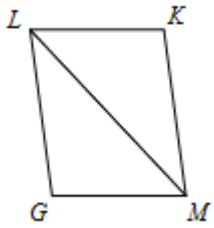
   d) How much money would Mr. Kelly have after 2 *months*?



UNIT 4: Triangle Congruence

4. Fill in the blanks on the proof below.

Given: $\overline{LK} \cong \overline{GM}$
$\overline{LK} \parallel \overline{GM}$



Prove: $\Delta LGM \cong \Delta MGL$

STATEMENTS	REASONS
1.	1. Given
2. $\angle LMG \cong \angle MLK$	2.
3.	3. Reflexive Property
4.	4.

UNIT 5: Quadrilaterals

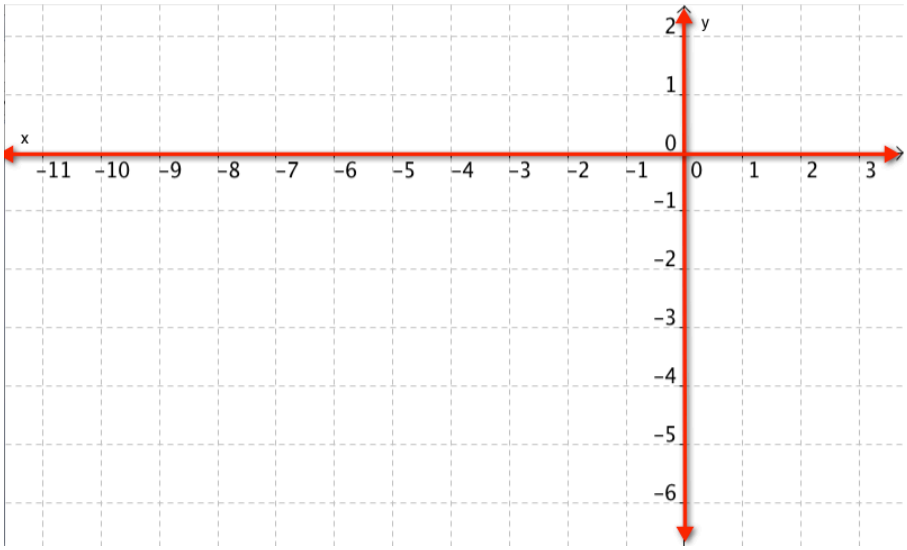
5. The coordinates of the vertices of quadrilateral BRUS are B(-8, 1), R(0, 0), U(-1, -5) and S(-9, -4).
   a. Graph and label BRUS. (Use a straight edge and label the coordinates of each point!)
   b. Use the slope formula to determine if BRUS is a parallelogram. $m = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$

Slope $\overline{BR}$ =

Slope $\overline{RU}$ =

Slope $\overline{US}$ =

Slope $\overline{SB}$ =



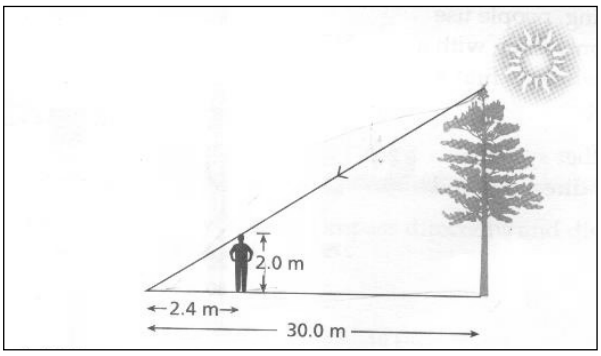
Is BRUS a parallelogram? _____

How do you know? _____

UNIT 6: Similar Figures

6. Find the height of the tree in the following:

a.



b.