

Name: _____

Please read.....

THIS IS A LOT OF INFORMATION TO RETAIN.

YOU CANNOT JUST WALK IN AND EXPECT TO PASS THIS EXAM.

The only thing standing between you and passing this exam.....is you. ← Read that again

Make the right choice.....

Do the right thing.....

Work hard....

Prepare.....

Finish what you started!

This will be turned in when you take the exam. Based upon completion,
this will count for up to 25 homework points.

NO LATE GRADE WILL BE GIVEN IF YOU FORGET IT.

DO NOT LOSE THIS!

Name: _____

2-Dimensional Distance

- 1) If G is located on a number line at -12, and Y is located on the same number line at 24,
What would be the distance between G and Y? _____
Where would the midpoint of \overline{GY} be located? _____
- 2) Given E is between D and F, $DE = 23.6$, and $DF = 71.2$ Draw a picture of this scenario, and find EF.

EF = _____
- 3) Suppose point M is on a number line, and it is located at -27. G is also on the same number line, and we know that $MG = 19$. What are the possible coordinates for G?

G = _____
- 4) Points M, A, T, and H are all on the same line, and in that exact order from left to right. $MA = 13.7$, $HT = 22.5$, and $MH = 64.1$. Draw an accurate picture to illustrate this situation, and find the length of AT.

AT = _____
- 5) Carefully draw and label a picture to represent this scenario. Analyze what you've drawn to help you solve for X
M is somewhere between B and C.
 $BM = 3x + 8$, $BC = 2x + 60$, and $MC = 29$ X = _____ BM = _____ BC = _____
- 6) Carefully draw and label a picture to represent this scenario. Analyze what you've drawn to help you solve for X
M is the midpoint of RT.
 $RM = 2x + 18$ and $MT = 7x - 27$ X = _____ RM = _____
MT = _____ RT = _____

Name: _____

Logic Unit

7) Conclusion is another name for the _____

8) Hypothesis is another name for the _____

Answer questions 9-12 based on the following conditional. Underline the hypothesis once and the conclusion twice.

If you are a German Shepherd, then you are a dog.

9) Is this original conditional a true or false statement? _____

10) What would the converse of this conditional be?

Answer questions 11-14 based on the following conditional. Underline the hypothesis once and the conclusion twice.

An animal has a beak if it is black and white.

11) Provide an instance to this conditional _____

12) Provide a counterexample to this conditional _____

13) Is this original conditional a true or false statement? _____

14) What would the converse of this conditional be?

Answer Questions 15-19 based on the following conditional. Underline the hypothesis once and conclusion twice.

If x times y is odd, then $x + y$ is even.

15) Provide three instances to this conditional _____ , _____ , _____

16) Provide a counterexample to this conditional _____

17) Is this original conditional a true or false statement? _____

18) What would the converse of this conditional be?

19) Is the converse true or false? _____

If you claim false, what is your counterexample? _____

20) If a rectangle has an area of 20, then it has a perimeter of 24.

What is an instance for this conditional? _____

What are two counterexamples for this conditional? _____ , _____

Name: _____

Unions and Intersections

21) When two sets of information or numbers have nothing in common, what is this called? _____

22) What is a union? _____

23) What is an intersection? _____

For questions 22-26:

a) find $M \cup N$

b) find $M \cap N$

24) $M = \{-3, 0, 1, 4, 6, 8\}$ $N = \{-5, -3, -1, 1, 5\}$

a. _____

b. _____

25) $M = \{-6, -5, -3, 7, 10\}$ $N = \{0, 2, 4, 5, 6, 8\}$

a. _____

b. _____

26) $N = \{5, -1, 3, 7, 0, -4\}$ $M = \{-2, 0, -5, 3, 5, 9, -1\}$

a. _____

b. _____

27) $N =$ the first 18 letters of the alphabet $M =$ the last 13 letters of the alphabet

a. _____

b. _____

28) $N =$ the first 7 positive even numbers $M =$ the first 4 positive odd numbers

a. _____

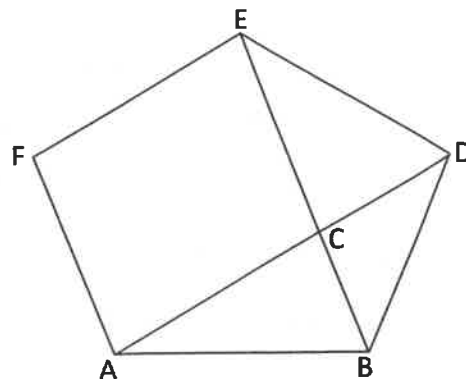
b. _____

Answer the following questions based on the picture provided to the right.

29) $\triangle ACB \cap \triangle EDC =$ _____

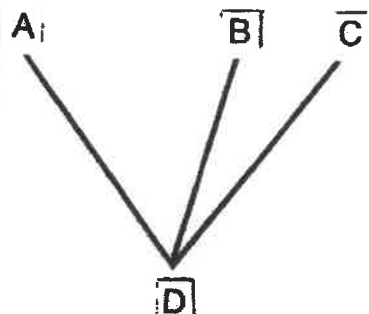
30) $\triangle BED \cap$ Trapezoid EFAB = _____

31) Rhombus FACE $\cap \triangle ADB =$ _____



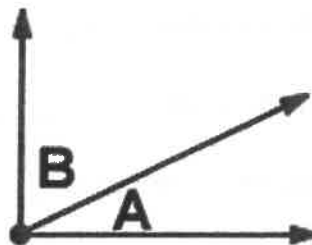
All About Angles

- 32) Solve for X
 $m\angle ADC = 2x + 36$, $m\angle ADB = 3x + 9$, $m\angle BDC = 12$



X = _____

- 33) Angles A and B are complementary
 $m\angle A = 3x + 17$, $m\angle B = 6x + 19$
 Find the measure of angle B

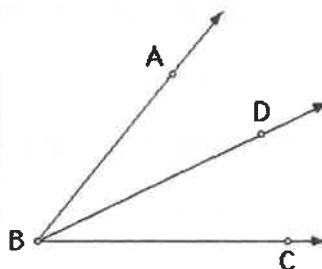


Angle B = _____

- 34) Angle 1 and Angle 2 form a Linear Pair.
 $m\angle 1 = 8x + 45$, $m\angle 2 = 3x - 8$
 Find the measure of angle 1

Angle 1 = _____

- 35) BD is a bisector of $m\angle ABC$.
 $m\angle DBC = 2(2x + 9)$, $m\angle ABD = 9x - 2$
 Find the measure of $\angle ABC$

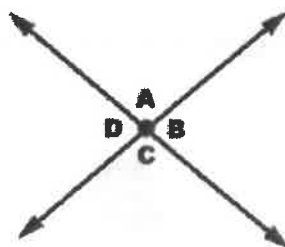


$\angle ABC =$ _____

- 36) Angle 1 and 2 are not adjacent, but are supplementary.
 $m\angle 1 = 8x + 31$, $m\angle 2 = 10x + 23$.
 Solve for X

X = _____

- 37) $m\angle B = 4(3x - 7)$ and $m\angle D = 3(2x + 13) + 5$
 Find the measure of angle D



Angle D = _____

Name: _____

Transformations

38) What is orientation? _____

39) What are the two possible orientations? _____ and _____

40) Circle all the transformations that preserve orientation, put an X through those which do not.

Translations

Rotations

Reflections

Dilations

41) What is another name for a Rotation? _____

42) What is another name for a Reflection? _____

43) What is another name for a Translation? _____

44) What does a dilation do to a shape? _____

45) The first number in a **vector** translation tells you to go _____ or _____.

46) The second number in a **vector** translation tells you to go _____ or _____.

47) The end result of a double reflection over parallel lines is a _____.

48) Does a rotation of 90° go clockwise or counterclockwise? _____

What is the rule? _____

49) Does a rotation of -90° go clockwise or counterclockwise? _____

What is the rule? _____

50) Why doesn't a 180° rotation have an orientation? _____

What is the rule? _____

51) What is the rule for reflecting over the X-axis: _____

52) What is the rule for reflecting over the Y-axis: _____

53) Label each of the following pictures as a Translation, Rotation, Reflection, or Dilations for

R

R

R

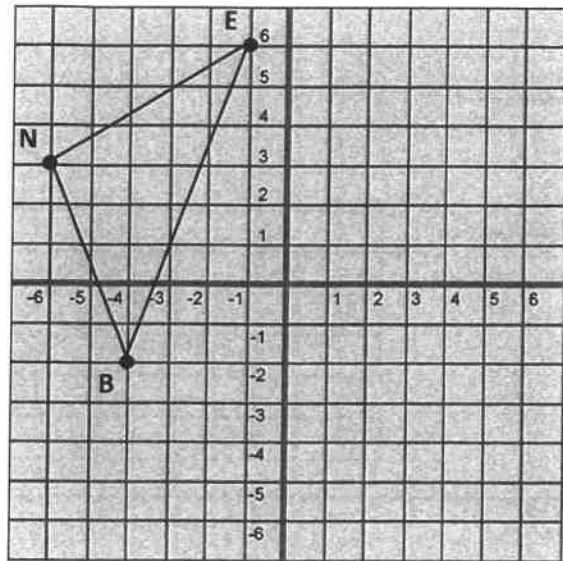
R

R

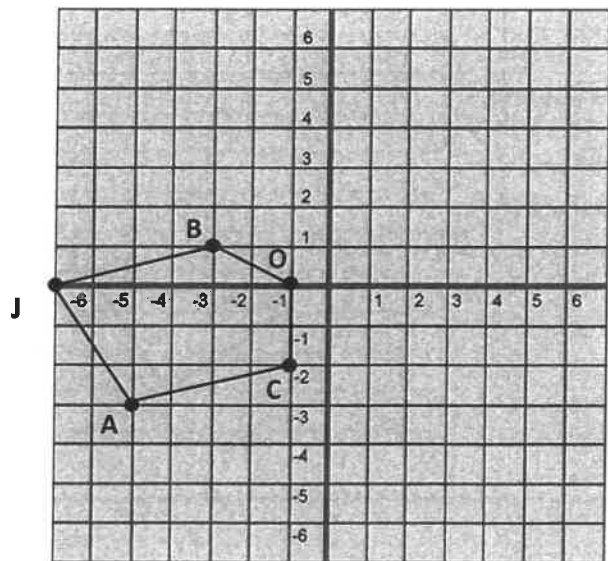
Name: _____

Perform the following reflections:

54) $r_{x\text{-axis}}$ ($\triangle BEN$)

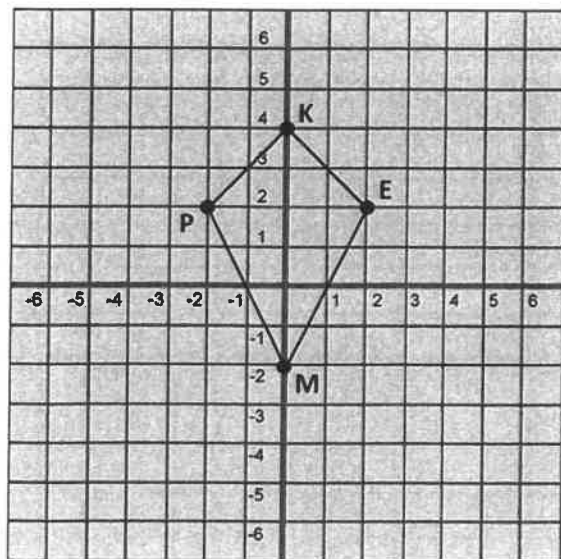


55) $r_{y\text{-axis}}$ ($\triangle JACOB$)

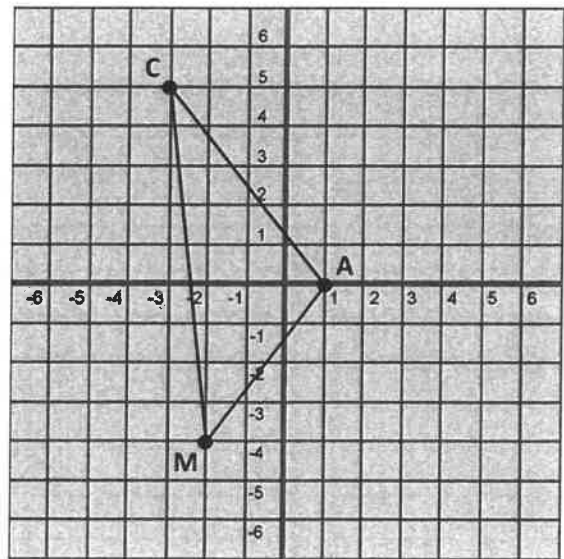


Perform the following translations:

56) Translate the given shape according to the vector provided. Vector = $(-3, 3)$



57) Translate the given shape according to the vector provided. Vector = $(4, 1)$

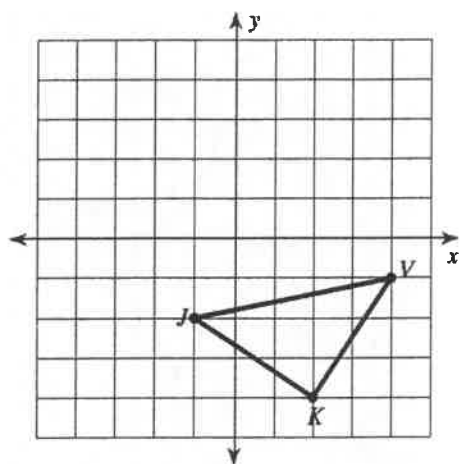


Name: _____

Perform the following Rotations

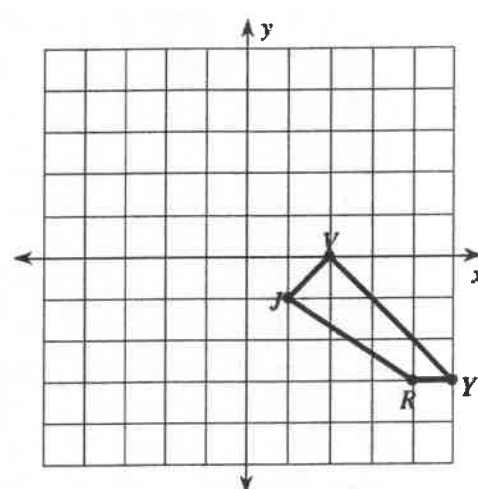
58) R_{90° (KJV)

$K' =$ _____
 $J' =$ _____
 $V' =$ _____



59) R_{180° (VJRY)

$V' =$ _____
 $J' =$ _____
 $R' =$ _____
 $Y' =$ _____



For each of the following questions, graph the Preimages and then apply the appropriate dilation scale factor.

60)

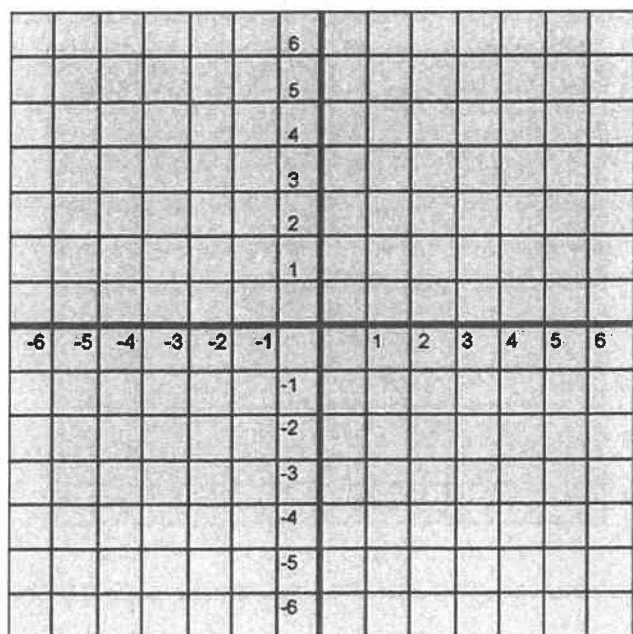
$A = (1, 1)$

$B = (-3, -2)$

$C = (3, 0)$

Apply a dilation of $k = 2$

$A' =$ _____ $B' =$ _____ $C' =$ _____



61)

$A = (6, 4)$

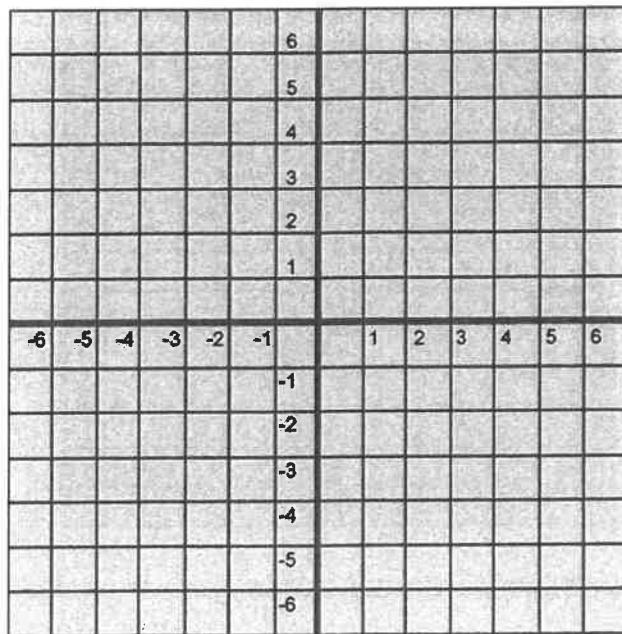
$B = (-4, 4)$

$C = (-2, -6)$

$D = (4, -6)$

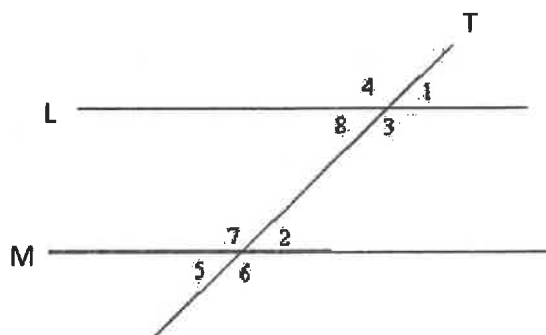
Apply a dilation of $k = 1/4$

$A' =$ _____ $B' =$ _____ $C' =$ _____ $D' =$ _____



Parallel Lines with Transversals

Use the following picture to solve questions 57-66. Line L is parallel to line M and both are cut by the transversal line T.



62) Focus on angle 5. Identify the special relationship name that angle 5 has with each of the following angles:

Angle 1: _____ Angle 2: _____

Angle 6: _____ Angle 8: _____

63) Focus on angle 7. Identify the special relationship name that angle 7 has with each of the following angles:

Angle 2: _____ Angle 3: _____

Angle 4: _____ Angle 8: _____

64) Name all angles that are equal in measure to angle 1 _____

65) Can an acute angle ever equal an obtuse angle? _____

66) Name 4 pair of corresponding sets of angles: _____, _____, _____, _____

67) Name 4 pair of vertical angles: _____, _____, _____, _____

68) Name 2 pair of alternate interior angles: _____, _____

69) Name 2 pair of alternate exterior angles: _____, _____

Solve the following problems for X.

70) Angle 8 = $4(x + 3)$ and Angle 7 = $2x + 72$

71) Angle 3 = $4(6x - 12)$ and Angle 6 = $17x + 1$

Name: _____

Parallel, Perpendicular, and Slope

72) What do parallel lines look like? Be very specific and articulate _____

73) What do perpendicular lines look like? Be very specific and articulate _____

74) In terms of slope, describe how parallel lines are identifiable and how perpendicular lines are identifiable.

Parallel = _____

Perpendicular = _____

75) For each situation, indicate what slope would be parallel and what slope would be perpendicular to the given set

Given	Parallel	Perpendicular
$m = \frac{-7}{9}$		
$y = \frac{5}{9}x - 4$		
$2y - 1x = 10$		

76) Determine if the following lines are **parallel, perpendicular, or neither** based on their individual slopes.

Line 1: $4y + 3x = 12$

Line 2: $12x + 16y = -64$

77) Determine if the following lines are **parallel, perpendicular, or neither** based on their individual slopes.

Line 1: $2x - 3y = 21$

Line 2: $-2y + 3x = 36$

78) Calculate the slopes to determine whether the lines \overleftrightarrow{AB} and \overleftrightarrow{CD} are parallel, perpendicular, or neither.

A (3,5) B (-2,7) C (10,5) D (6,15)

Name: _____

QUADS

Match the shapes name to both the physical description and the appropriate picture.

Each answer line will contain one letter (for the description) and one number (for the picture)

79) _____ Parallelogram

A. Only 1 set of parallel sides

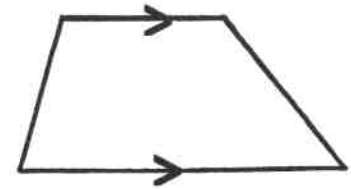
1



80) _____ Square

B. 2 sets of parallel sides

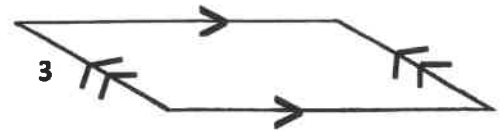
2



81) _____ Kite

C. Four right angles

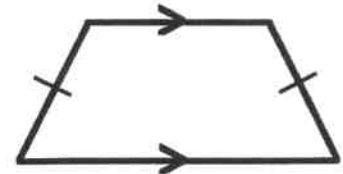
3



82) _____ Isosceles Trapezoid

D. Four right angles, AND all sides are equal in length

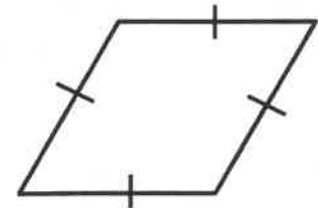
4



83) _____ Rectangle

E. No Parallel Lines, BUT 2 unique sets of equal sides

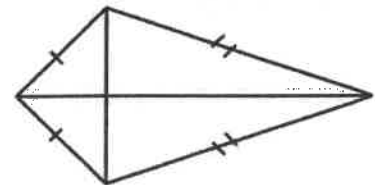
5



84) _____ Trapezoid

F. All sides are equal in length

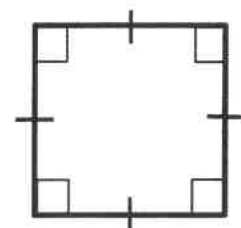
6



85) _____ Rhombus

G. Only 1 set of parallel sides, AND the non-parallel sides are =

7



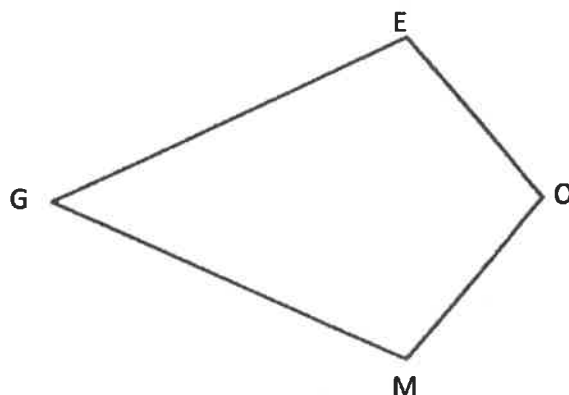
Name: _____

Kites

- 86) How many lines of symmetry does a Kite have? _____
- 87) How many equal interior angles does a kite have (before you put in the diagonals)? _____
- 88) Inside of a kite, the interior angles will always add up to _____ degrees.
- 89) Where the diagonals meet, the two lines will be _____ to each other, which means the intersection of the diagonals will always create _____ degree angles.

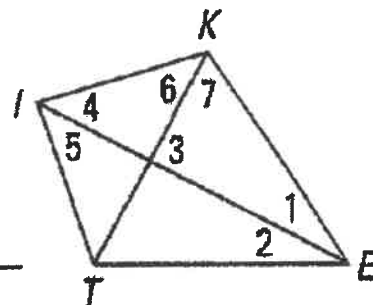
- 90) If angle G is 42 degrees and angle O is 106 degrees, what is the measure of angle E?

Angle E = _____



- 91) Use kite KITE to the right. If $m\angle 1 = 29^\circ$ and $m\angle KIT = 88^\circ$, find each of the following angle measures.

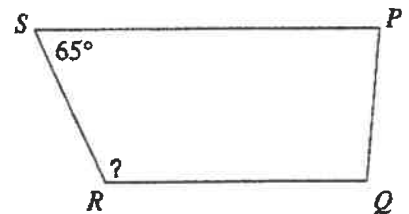
$m\angle 2$ _____	$m\angle 5$ _____
$m\angle KET$ _____	$m\angle 6$ _____
$m\angle 3$ _____	$m\angle 7$ _____



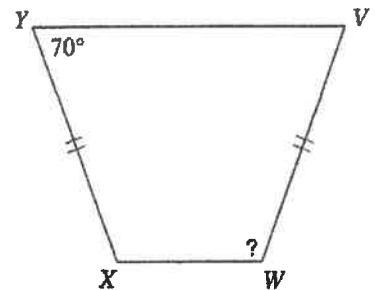
Name: _____

Trapezoids

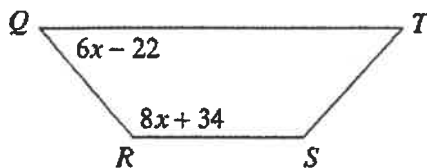
- 92) Do trapezoids have one set of parallel sides or two sets of parallel sides? _____
- 93) The left two angles on ANY trapezoid _____
- 94) The right two angles on ANY trapezoid _____
- 95) What four things are special about an *Isosceles* trapezoid?
- a. _____
 - b. _____
 - c. _____
 - d. _____
- 96) The interior angles on ANY trapezoid will always total _____ degrees.
- 97) Calculate the value of the angle indicated by the question mark.



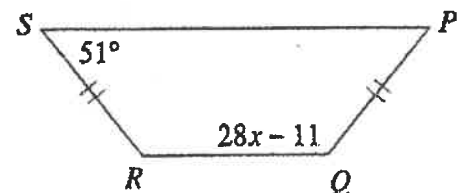
- 98) Calculate the value of the angle indicated by the question mark.



- 99) Find the measure of angle R.



- 100) Solve for X

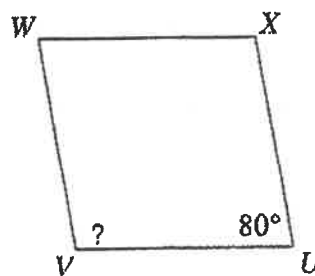


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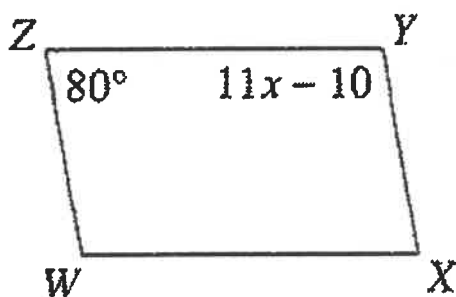
Parallelograms

- 101) How many sets of parallel lines are found in a parallelogram? _____
- 102) On any parallelogram, opposite sides are always _____
- 103) On any parallelogram, opposite angles are always _____
- 104) Two consecutive interior angles (left 2, top 2, right 2, bottom 2) always total _____ degrees.
- 105) If you add up all four interior angles within a parallelogram, it will always total _____ degrees.

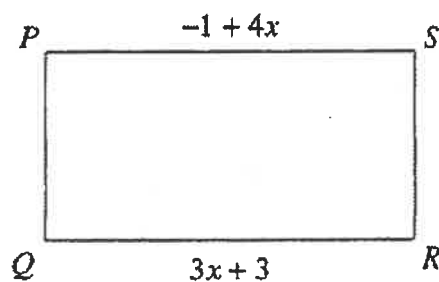
- 106) Calculate the value of the angle indicated by the question mark.



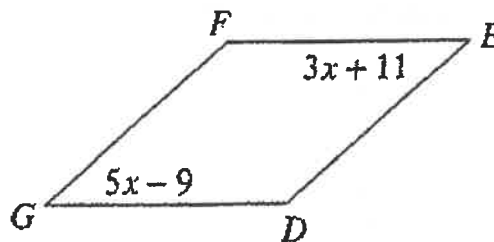
- 107) Solve for X



- 108) Calculate the length of RQ



- 109) Calculate the measure of angle G



Name: _____

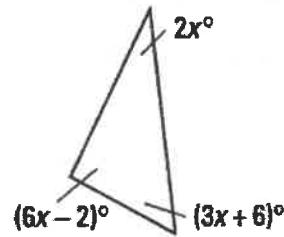
Triangles

110) No matter what kind of triangle you deal with, the interior angles will always total _____ degrees.

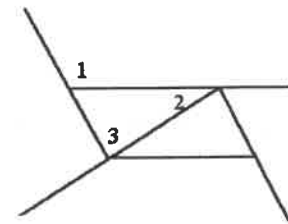
111) The exterior angle theorem states "The outside angle is equal to _____

112) A triangle has two angle measures of 15 degrees and 43 degrees respectively.
Find the measure of the third angle.

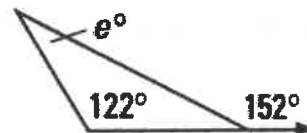
113) Using the triangle at the right, calculate the value of X.



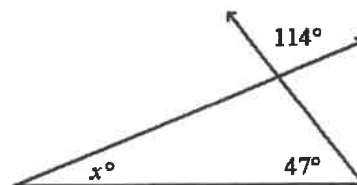
114) The folding chair has different settings that change the angles formed by its parts. Suppose $m\angle 1$ is 116° and $m\angle 3$ is 70. Find the measure of angle 2.



115) Given the figure to the right, Calculate the value of "e"



116) Calculate the value of the variable.



Name: _____

Polygons

117) Give the appropriate name for each shape with the following number of sides:

10: _____ 9: _____ 8: _____ 7: _____

6: _____ 5: _____ 4: _____ 3: _____

118) What does it mean for a shape to be "REGULAR"? _____

119) What does convex mean? _____

120) What does non-convex mean? _____

121) What is the formula for the Polygon Sum Theorem? _____
What does that formula calculate? _____

122) How do you calculate the value of one individual angle within any regular shape? _____

123) Draw a **NON-convex pentagon**?

124) Draw a **convex REGULAR quadrilateral**?

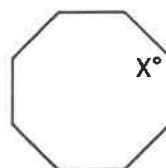
125) Find the sum (total) of the measures of the interior angles of an **15-agon**.

126) Find the sum (total) of the measures of the interior angles of **decagon**.

127) What is the measure of **EACH** interior angle on a **regular pentagon**?

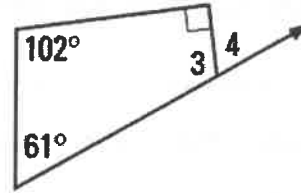
128) What is the measure of **EACH** interior angle on a **regular 39 sided shape**?

129) What is the value of X in the shape to the right?

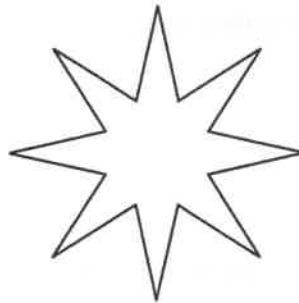


Name: _____

- 130) In the figure at the right, find $m\angle 3$ and $m\angle 4$.



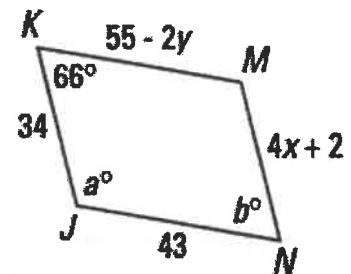
- 131) How many lines of symmetry can be drawn in the picture below, draw them in with dashed lines?



- 132) Quadrilateral RSTU below is a trapezoid with bases \overline{UR} and \overline{TS} .
If $m\angle R = 133^\circ$, and $m\angle T = 61^\circ$, find $m\angle S$ and $m\angle U$



- 133) KMNJ is a parallelogram. Calculate the values for x , y , a , and b .



- 134) Suppose A has a coordinate of 6 on a number line and D is on that same line such that AD has a distance of 15 units. What are the possible coordinates for D?

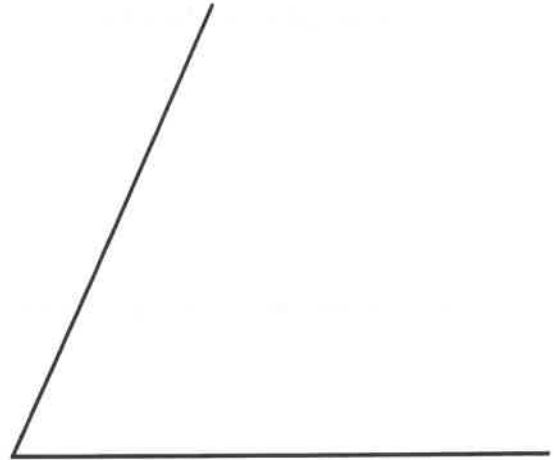
Name: _____

Other Miscellaneous Important Stuff to Know

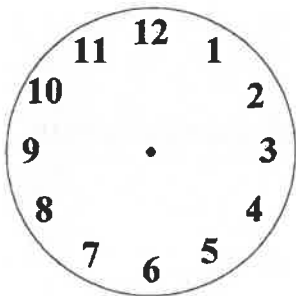
- 135) A theorem is a _____
- 136) The three undefined terms in Geometry are _____
- 137) Distance can only be a _____ value.
- 138) Slope Intercept form is _____
"m" stands for _____
"b" stands for _____
- 139) Construct a perpendicular bisector for the following line:



- 140) Construct an angle bisector for the following angle:



Use the clock pictured below to answer these questions



- 141) If the hour hand started at 12 and rotated clockwise down to 5, how many degrees would it have rotated?
- 142) If the hour hand started at 3 and rotated clockwise over to 11, how many degrees would it have rotated?
- 143) If the hour hand started at 7 and rotated clockwise up to 10, how many degrees would it have rotated?