Name: Key 12/14/2017 Geometry – Semester Test

1) Use the point $(1, 1)$ as the starting point and perform the following transformations on it.

$(x, y) \rightarrow (x-5, y+2) \rightarrow (3x, 4y) \rightarrow (-x, -y) \rightarrow (-y, x)$

(2) a) $(-4, 3)$ b) $(-12, 12)$ c) $(12, -12)$ d) $(12, 12)$

2) Find the missing values of the triangle for each situation.

(6) Sine law / Cosine law

Given:	α	β	γ	a 13.65	b	c
a)	~~45°~~ 28°	17°	135°	~~20.56~~	8.5	20.56
b)	67°	26°	87°	11.99	5.8	13

3) You have $\angle ABC$ with T on the interior. $2x+3x+5=45$, $x=8$

a) Draw a picture for this scenario

(6) b) If $m\angle ABC = 45°$, $m\angle ABT = (2x)°$, and $m\angle CBT = (3x+5)°$, what is $m\angle CBT$? 29°

c) If $\overrightarrow{BT}$ is the angle bisector of $\angle ABC$, $\angle ABT = (3x)°$, and $m\angle ABC = 60°$, what is $m\angle CBT$? 2 30°

(1) 4) Bisector means to Cut in half.

(2) 5) Define an angle and state its units. 2 rays that share a common endpoint degrees

6) Find the supplemental angle for each of the following:

(2) a) 67° $180-67=113°$ b) $x°$ $(180-x)°$

7) MATCHING!!

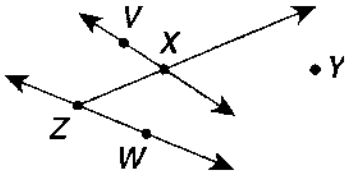
(3)

C	Point	A A part of a line that consists of 2 points and all points between them.
E	Opposite Rays	B A flat surface that has no thickness and extends forever.
B	Plane	C Names a location, has no size, represented by a dot.
A	Segment	D A point at one end of a segment or ray.
D	Endpoint	E 2 Rays that have a common endpoint and form a line.

8) From the picture on the right, fill in the following chart.

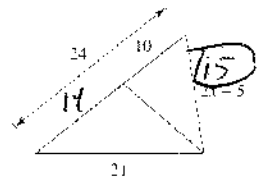
(2)

Name	Notation
Ray	$\overrightarrow{ZX}$
Point	Y
Segment	$\overline{ZW}$
line	$\overleftrightarrow{VX}$



9) Find the missing side.

(6) a)

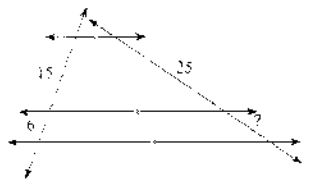


$\frac{14}{21} = \frac{10}{2x-5}$

$28x-70=210$

$x=10$

b)



$\frac{15}{6} = \frac{25}{x}$

$x=10$

10) Give the definitions of the following trigonometric functions.

(3) a) $\sin(\theta) = \frac{opp}{hyp}$ b) $\cos(\theta) = \frac{adj}{hyp}$ c) $\tan(\theta) = \frac{opp}{adj}$

11) Using the triangle on the right and the values given, find all the missing sides and angles in the following chart.

Given:	α	β	a	b	c
a)	30°	60°	10	17.3	20
b)	53°	37°	4	3	5

12) Chris pulls his 50kg little brother in a sled. The rope makes a 60° with the horizontal. How much force does Chris need pull on the rope with to accelerate ~~his brother~~ at $4m/s^2$?

400N

13) Find the distance between the following points AND the midpoints. Write your answers in the simplest form.

a) (1, − 2) & (2, 0) $M\left(\frac{3}{2}, -1\right)$ $d = \sqrt{(2-1)^2 + (0--2)^2} = \sqrt{5}$

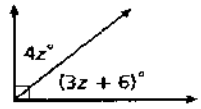
b) (−4, 7) & (−4, −2) $M = \left(-4, \frac{5}{2}\right)$ $d = \sqrt{(-4--4)^2 + (-2-7)^2}$ 9

14) Find a vector in component form for the following: Magnitude 20 and direction 60°

$\cos 60 = \frac{x}{20}$ $\sin 60 = \frac{y}{20}$ $\langle 10, 17.3 \rangle$

15) Solve for the variable in the given problems:

a)

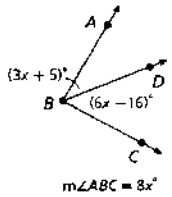


$4z + 3z + 6 = 90$

$7z = 84$

$z = 12$

b)



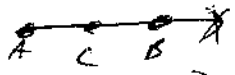
$3x + 5 + 6x - 16 = 8x$

$9x - 11 = 8x$

$x = 11$

16) You have line segment AB with C between A and B.

a) AB is 6 ft long and C is the midpoint of AB. What is the length of AC?



b) AB is $2x + 10$, AC is $x + 2$ and BC is $5x$. What is the length of AB? $2x + 10 = x + 2 + 5x$ $x = 2$

c) AB is $14 - x$ long, C is the midpoint of AB, and AC is $3x$. What is the length of BC?

$14 - x = 3x + 3x$ $x = 2$

17) Find the geometric mean of each pair of numbers. Give your answer in simplest radical form.

a) 66 and 36 $\sqrt{66 \cdot 36} = 6\sqrt{66}$

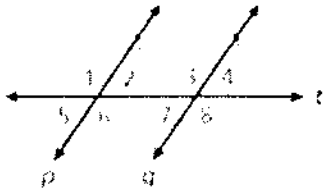
b) 35 and 20 $\sqrt{35 \cdot 20} = 10\sqrt{7}$

Use the following picture to answer the questions 18 and 19 .

18) Find the missing angles given the following information.

a) $m\angle 2 = 155°$, $m\angle 3 = ?$ 25°

b) $m\angle 1 = 60°$, $m\angle 8 = ?$ 60°



19) Match the following angles with their proper description using the picture from above.

$\angle 1$ and $\angle 3$	E
$\angle 2$ and $\angle 3$	C
$\angle 5$ and $\angle 4$	B
$\angle 1$ and $\angle 4$	D
$\angle 8$ and $\angle 3$	F
$\angle 1$ and $\angle 8$	B
$\angle 2$ and $\angle 7$	A

A. Alternate Interior Angles
B. Alternate Exterior Angles
C. Same-side Interior angles
D. Same-side Exterior angles
E. Corresponding Angles
F. Vertical Angles
G. None of these

Name: Key 2/2/2018 Geometry – Test 5

1) Solve the following equation and justify each step.

$$2(x-8)=10$$

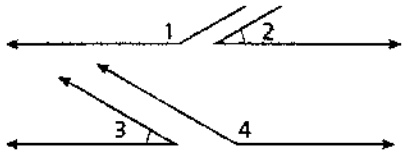
Statements	Reasons
$2(x-8)=10$	Given
$2x-16=10$	Distr. prop.
$2x=26$	Add ~~subt~~ prop of =
$x=13$	Div. prop. =

(4)

2) Fill in the blanks for this two-column proof.

Given: $\angle 1$ and $\angle 2$ are supplementary, and $\angle 3$ and $\angle 4$ are supplementary.
$\angle 2 \cong \angle 3$

Prove: $\angle 1 \cong \angle 4$



Proof:

Statements	Reasons
1. $\angle 1$ and $\angle 2$ are supplementary. $\angle 3$ and $\angle 4$ are supplementary.	1. Given
2. a. ?	2. Def. of supp. ∠
3. $m\angle 1 + m\angle 2 = m\angle 3 + m\angle 4$	3. b. ?
4. $\angle 2 \cong \angle 3$	4. Given
5. $m\angle 2 = m\angle 3$	5. Def. of ≅ ∠
6. c. ?	6. Subtr. Prop. of = *Steps 3, 5*
7. $\angle 1 \cong \angle 4$	7. d. ?

(4)

a) $m\angle 1 + m\angle 2 = 180^\circ$, $m\angle 3 + m\angle 4 = 180^\circ$

b) Subst.

c) ~~eq~~ $m\angle 1 + m\angle 3 = m\angle 3 + m\angle 4$

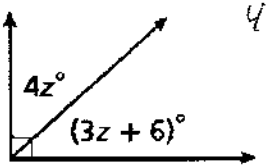
d) Sub. prop =

Def of $\cong$

3) Solve for the variable in the given problems:

(6)

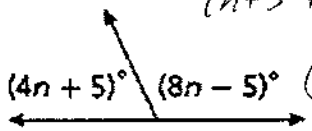
a)



$4z + 3z + 6 = 90$

$z = 12$

b)



$4n + 5 + 8n - 5 = 180°$

$n = 15$

4) Write a proof given the following information.
Given: $\angle 1$ & $\angle 2$ are complimentary and $\angle 1$ & $\angle 3$ are complimentary
Prove: $\angle 2 \cong \angle 3$

(5)

	Statements	Reasons
1)	$\angle 1$ & $\angle 2$ are comp. $\angle 1$ & $\angle 3$ are comp.	Given
2)	$m\angle 1 + m\angle 2 = 90°$ $m\angle 1 + m\angle 3 = 90°$	Def. of comp.
3)	$m\angle 1 + m\angle 2 = m\angle 1 + m\angle 3$	Subst. prop $=$
4)	$m\angle 2 = m\angle 3$	Sub. prop $=$
5)	$\angle 2 \cong \angle 3$	Def of $\cong$

5) Given the rule: "If you touch someone, then you will wash the dishes."

(3)

a) State the converse: If dishes, then touch.

b) State the inverse: If no touch, then no dishes.

c) State the contrapositive: If no dishes, then no touch.

6) Build a truth table for $\sim q \rightarrow p$

(3)

p	q	$\sim p$	$\sim q$	$\sim q \rightarrow p$					
T	T	F	F	T					
T	F	F	T	T					
F	T	T	F	T					
F	F	T	T	F					

(1) 7) Given: 8, 11, 10, 9, 12, 7, ...
What is the next 2 terms in the sequence? 14, 5

(1) 8) Given: A, L, J, C, E, H, ~~G, F~~, I, D
What are the next 2 terms in the sequence?

(1) 9) Determine if the following is a true biconditional. If not, provide a counterexample.

If $a + b = 2$, then $a^2 + b^2 = 4$

$1 + 1 = 2$ $\quad 1^2 + 1^2 = 2$ $\quad$ false

A B C D E F G H I J K L
1 4 5 6 3 2

Name: Key 3/2/2018 Geometry – Test 6

1) Given the following equations, identify the slope and y-intercept.

a) $y = -2x + 8$ (8) $m=-2$, $b=8$

b) $y - 5x = 7.5$ $+5x \quad +5x$ $m=5$, $b=7.5$

c) $y = \frac{1}{8}x - 7$ $m=\frac{1}{8}$, $b=-7$

2) Using the information from above, fill the following chart. (5)

	Slope	Slope of a parallel line	Slope of a perpendicular line
A)	-2	-2	1/2
B)	5	5	-1/5
C)	1/8	1/8	-8

3) Find the equation of a line in slope-intercept form that is parallel to the given line and passes the given point.

a) $y = 4x - 5$ & $(2, -7)$ (6) $m=4$

$y = 4(x-2) - 7$

$= 4x - 8 - 7$

$y = 4x - 15$

b) $3x - y = -6$ & $(1, 0)$ $m=3$

$-3x \quad -3x$

$\frac{-y = -3x - 6}{-1 \quad -1}$

$y = 3x + 6$

$y = 3(x-1) + 0$

$y = 3x - 3$

4) Find the equation of a line in slope-intercept form that is perpendicular to the given line and passes the given point.

a) $y = -3x + 5$ & $(9, -2)$ (6) $m = \frac{1}{3}$

$y = \frac{1}{3}(x-9) - 2$

$= \frac{1}{3}x - 3 - 2$

$y = \frac{1}{3}x - 5$

b) $5x + y = 2$ & $(10, -3)$ $m = \frac{1}{5}$

$-5x \quad -5x$

$y = -5x + 2$

$y = \frac{1}{5}(x-10) - 3$

$= \frac{1}{5}x - 2 - 3$

$y = \frac{1}{5}x - 5$

5) Fill in the blank for the formula used to calculate slope if you are given the points: (x_1, y_1) & (x_2, y_2) (1)

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

6) Given the following points calculate the slopes of the lines and fill in the chart.

$A(-6, -2), B(-4, 8), C(-14, 10)$, and $D(-7, 3)$

(4) $\frac{8 - -2}{-4 + 6} = \frac{10}{2}$ $\frac{10-8}{-14+4} = \frac{2}{-10}$ $\frac{3-10}{-7--14} = \frac{-7}{7}$ $\frac{3--2}{-7+6} = \frac{5}{-1}$

	Slope:
A) AB	5
B) BC	-1/5
C) CD	-1
D) AD	-5

7) Using the information from question 6, fill in the blanks for the following. Use the perpendicular symbol ($\perp$) and the parallel symbol ($\parallel$) to state whether the lines are either parallel or perpendicular. If they are neither, write that off to the side. (3)

a) AB CD neither

b) AB $\perp$ BC

c) CD BC neither

d) AD BC

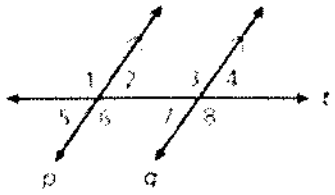
e) AD CD

f) AD AB

8) Find the missing angles given the following information.

(2) a) $m\angle 8 = 121°, m\angle 3 = ?$ 121°

b) $m\angle 5 = 37°, m\angle 8 = ?$ 143°



9) Solve for x using the angles of the above picture:

(4) a) $m\angle 1 = 2x + 9, m\angle 4 = 9x - 28$ $2x+9+9x-28=180$ $11x=199$ $x=18.09$

b) $m\angle 6 = x + 3, m\angle 7 = 4x + 60$ $x+3+4x+60=180$ $5x=117$ $x=23.4$

10) Circle all the answers below that could be used to say $p \parallel q$

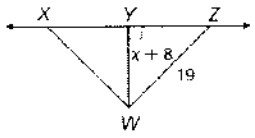
(3)
- a) $\angle 8 \cong \angle 3$
- b) $\angle 1 \cong \angle 3$
- c) $\angle 2 \cong \angle 3$
- d) $\angle 1 \cong \angle 4$
- e) $\angle 5 \cong \angle 4$
- f) $\angle 1 \cong \angle 8$
- g) $\angle 2 \cong \angle 7$
- h) $\angle 6$ and $\angle 3$ are supplemental
- i) $\angle 7$ and $\angle 3$ are supplemental
- j) $\angle 6$ and $\angle 7$ are supplemental
- k) $\angle 7$ and $\angle 2$ are supplemental
- l) $\angle 2$ and $\angle 3$ are supplemental

11) Match the following angles with their proper description using the picture from above.

(2)
- a) $\angle 1$ and $\angle 3$ E
- b) $\angle 1$ and $\angle 4$ D
- c) $\angle 2$ and $\angle 3$ C
- d) $\angle 8$ and $\angle 3$ F
- e) $\angle 1$ and $\angle 8$ B
- f) $\angle 2$ and $\angle 7$ A
- g) $\angle 5$ and $\angle 4$ B
- h) $\angle 6$ and $\angle 7$ C

A. Alternate Interior Angles
B. Alternate Exterior Angles
C. Same-side Interior angles
D. Same-side Exterior angles
E. Corresponding Angles
F. Vertical Angles
G. None of these

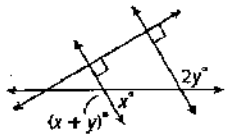
12) Write and solve an inequality using the triangle on the right.



(2) $x+8<19$ $x<11$

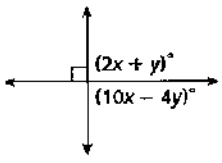
13) Find x (and y) so that l and m are parallel.

(6) a)



$x+y+x=180$ $-2(2x+y=180)$ $(x+2y=180)$ $-4x-2y=-360$ $x+2y=180$ $-3x=-180$ $x=60^\circ$ $y=60^\circ$

b)



$3(2x+y=90)$ $12x-3y=180$ $6x+3y=270$ $18x=450$ $x=25$ $y=40$

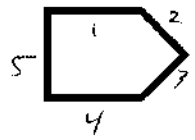
Name: Key 4/23/2018 Geometry – Test 7

(8)

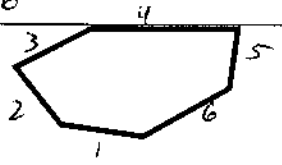
1) Find the sum of the interior angles of the following shapes:

a) A nonagon $(9-2)180 = 1260°$

b) An hexagon $(6-2)180 = 720°$

c) 

$(5-2)180 = 540°$

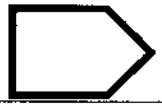
d) 

$(6-2)180 = 720°$

(4)

2) The following shapes are regular. Find an exterior angle.

a) quadrilateral $\frac{360}{4} = 90°$

b)  $\frac{360}{5} = 72°$

c) heptagon $\frac{360}{7} = 51.4°$

d) decagon $\frac{360}{10} = 36°$

(4)

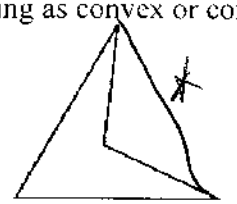
3) The measure of an interior angle of a regular polygon is given. Find the number of sides.

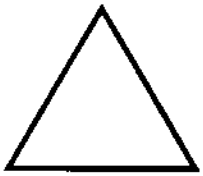
a) 140 $\frac{360}{180-140} = \frac{360}{40} =$ 9 sides

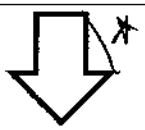
b) 168 $\frac{360}{180-168} = 30$ sides.

(4)

4) Classify the following as convex or concave.

a)  Concave

b)  Convex

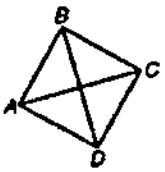
c)  Concave

d)  Convex

(4)

5) Use the figure on the right to determine whether each conclusion is valid. If not, tell what additional information is needed to make it valid.

a) **Given:** $AB||DC, AD||BC.\ \angle ABC \cong \angle DAB$ **Conclusion:** ABCD is a square.

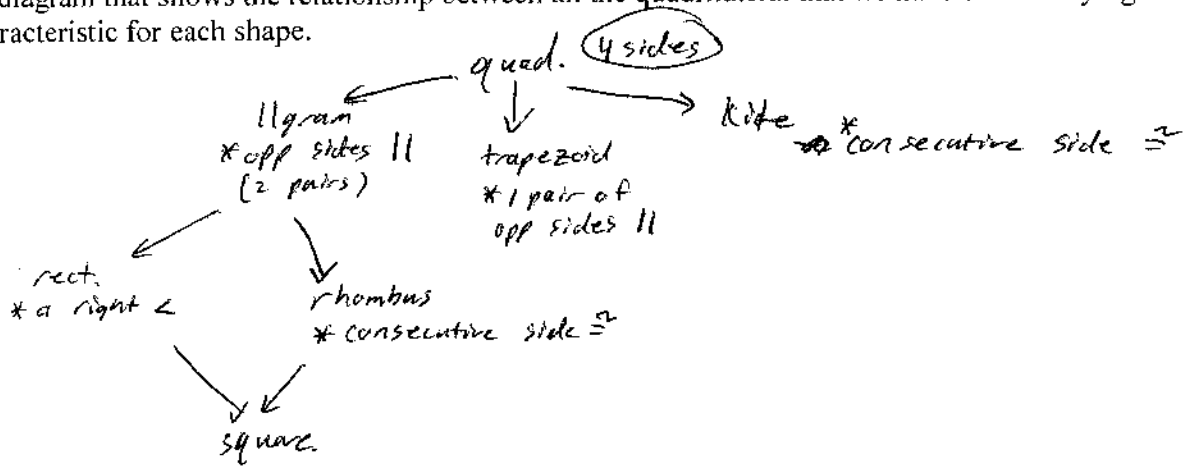


llgram. ⇒rect. need $AB = BC$.

b) **Given:** $AB = DC$ and AD=BC $AC \perp BD$ **Conclusion:** ABCD is a square.

llgram. rhombus. need $AB \perp AD$.

6) Make a diagram that shows the relationship between all the quadrilateral that we have been studying. Give on unique characteristic for each shape.



(7)

7) Use slopes and distances to determine whether the following quadrilateral is a parallelogram, rectangle, rhombus, square, kite, or trapezoid. Give ALL names that apply.

$E(-4,-1), F(-3,2), G(3,0), H(2,-3)$

(4)

$EF = \sqrt{3^2+1} = \sqrt{10}$

$FG = \sqrt{4+6^2} = \sqrt{40} = 2\sqrt{10}$

$GH = \sqrt{3^2+1} = \sqrt{10}$

$HE = \sqrt{6^2+2^2} = 2\sqrt{10}$

llgram, rect

slopes:

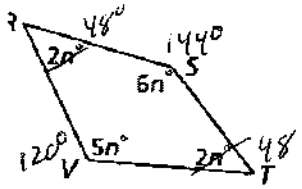
$EF = \frac{3}{1}$

$FG = \frac{-2}{6} = -\frac{1}{3}$

8) Find the missing angles

(12)

a)

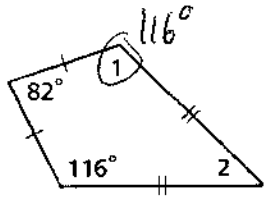


$2n+6n+2n+5n=360$

$15n=360$

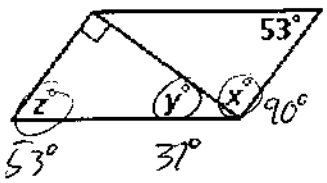
$n=24$

b)

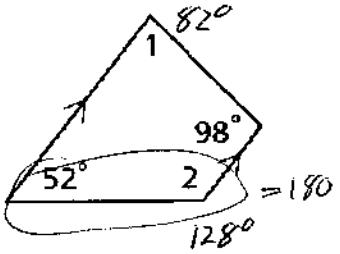


$360 - 116 - 116 - 82 = 46°$

c) Parallelogram



d)



Name: Key 1/12/2018 Geometry – Quiz 13

1) Match the following forms with their definitions

C	W-2	A. form used by employees to inform employers of exemptions
A	W-4	B. form used to report income to the state
D	1040	C. form used by employers to report income paid to an employee
B	ND-1	D. form used to report income to the IRS

2) Given the rule: "If you don't do your homework, then you will fail geometry."

a) State the converse: If you fail geometry, then you didn't do your Hw.

b) State the inverse: If you do your Hw, then you pass geometry.

c) State the contrapositive: If you pass geometry, then you did your Hw.

3) Given the rule: "If $x > 11$, then $x > 3$."

a) What is the hypothesis? $x > 11$

b) What is the conclusion? $x > 3$

4) Given: 2, 3, 6, 18, ...

What is the next term in the sequence? 108

5) Given: A, Z, B, Y, C, X... D, W, E

What is the next 3 terms in the pattern?

6) Build a truth table for $\sim p \rightarrow q$

p	q	$\sim p$	$\sim p \rightarrow q$						
T	T	F	T						
T	F	F	T						
F	T	T	T						
F	F	T	F						

Name: 1/19/2018 Geometry – Quiz 14

1) Given the rule: "If you touch someone, then you will wash the dishes."

a) State the converse: If dishes, then touch.

b) State the inverse: If no touch, then no dishes.

c) State the contrapositive: If no dishes, then no touch.

2) Decide which arguments are valid.

All politicians make promises.
Hobie is a politician.
Hobie makes promises. — Valid.

All students take math classes.
Joey is not a student.
Joey does not take math classes. — not valid.

3) Given the rule: "If $x < 11$, then $x > 3$."

a) What is the hypothesis? $x < 11$

b) What is the conclusion? $x > 3$

c) Is it true? Explain. no $x = 2$.

4) Given: 1, 1, 2, 3, 5, 8, ...
What are the next 2 terms in the sequence? 13, 21

5) Build a truth table for

$$\begin{array}{l} \sim p \rightarrow q \\ p \\ \hline \sim q \end{array}$$

p	q	~p	~q	~p → q (a)	a ∧ p	b → ~q (b)			
T	T	F	F	T	T	F			
T	F	F	T	T	T	T			
F	T	T	F	T	F	T			
F	F	T	T	F	F	T			

Name: Key 1/26/2018 Geometry – Quiz 15

1) Given the rule: "If you touch someone, then you will wash the dishes."

a) State the converse: If wash dishes, then touch someone.

b) State the inverse: If do not touch someone, then no dishes.

c) State the contrapositive: If no dishes, then no touch someone.

2) The definition of an angle is: An angle is two rays that share a common endpoint.

a) Write this as a condition statement.

If angle, then 2 rays share a common endpoint.

b) Write the converse of your condition statement.

If 2 rays share a common endpoint, then angle.

c) Write the definition as a biconditional.

An angle if and only if 2 rays share a common endpoint.

3) Given the rule: "If $x < 11$, then $x > 3$."

a) What is the hypothesis? $x < 11$

b) What is the conclusion? $x > 3$

c) Is it true? Explain. no $x = 7$

4) Determine if the following is a true biconditional. If not, provide a counterexample.

If $|a| = |b|$, then $a = b$

no, $a = -1$ $b = 1$

5) Solve the following equation and justify each step.

$2(x - 6) = 14$ Given

Statements	Reasons
$2x - 12 = 14$	Distributive prop.
$+12 \quad +12$	Add. prop. =
$\frac{2x}{2} = \frac{26}{2}$	Simplify
	Division prop =
$x = 13$	Simplify.

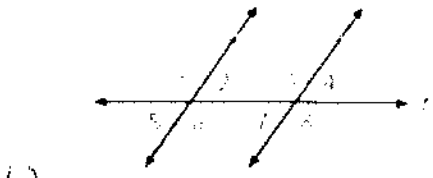
Name: Key 2/16/2018 Geometry – Quiz 18

Use the following picture to answer the questions on the quiz.

1) Find the missing angles given the following information.

a) $m\angle 2 = 155°$, $m\angle 3 = ?$ $25°$

b) $m\angle 1 = 60°$, $m\angle 8 = ?$ $60°$



2) Solve for x using the angles of the above picture:

a) $m\angle 5 = x + 4$, $m\angle 7 = 2x - 29$

b) $m\angle 6 = x$, $m\angle 7 = 2x + 30$

a) $x+4 = 2x-29$
$+29 \quad +29$
$33 = x$

b) $x + 2x + 30 = 180$
$-30 \quad -30$
$\frac{3x}{3} = \frac{150}{3}$
$x = 50$

3) Circle all the answers below that could be used to say $p \parallel q$

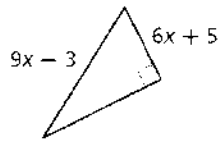
a) $\angle 1 \cong \angle 3$
b) $\angle 2 \cong \angle 3$
c) $\angle 5 \cong \angle 4$
d) $\angle 1 \cong \angle 4$
e) $\angle 8 \cong \angle 3$
f) $\angle 1 \cong \angle 8$
g) $\angle 2 \cong \angle 7$
h) $\angle 2$ and $\angle 3$ are supplemental
i) $\angle 6$ and $\angle 3$ are supplemental
j) $\angle 7$ and $\angle 3$ are supplemental
k) $\angle 7$ and $\angle 2$ are supplemental
l) $\angle 6$ and $\angle 7$ are supplemental

4) Match the following angles with their proper description using the picture from above.

a) $\angle 1$ and $\angle 3$ E
b) $\angle 2$ and $\angle 3$ C
c) $\angle 5$ and $\angle 4$ B
d) $\angle 1$ and $\angle 4$ D
e) $\angle 8$ and $\angle 3$ F
f) $\angle 1$ and $\angle 8$ B
g) $\angle 2$ and $\angle 7$ A
h) $\angle 6$ and $\angle 7$ C

A. Alternate Interior Angles
B. Alternate Exterior Angles
C. Same-side Interior angles
D. Same-side Exterior angles
E. Corresponding Angles
F. Vertical Angles
G. None of these

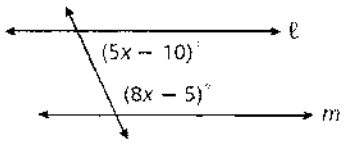
5) Write and solve an inequality using the triangle on the right.



$6x+5 < 9x-3$
$-6x+3 \quad -6x+3$
$8 < 3x$
$x > \frac{8}{3}$

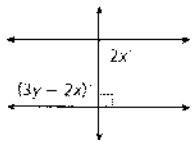
6) Find x (and y) so that l and m are parallel.

a)



$5x-10+8x-5 = 180$
$+15$
$\frac{13x}{13} = \frac{195}{13}$
$x = 15$

b)



$2x = 3y - 2x$
$4x = 3y$
$2x + 90 = 180$
$x = 45 \Rightarrow 4 \cdot 45 = 3y$
$y = 60$

Name: Key 3/23/2018 Geometry – Quiz 22

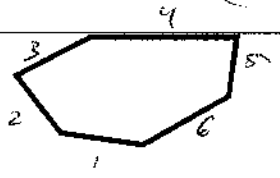
1) Find the sum of the interior angles of the following shapes:

a) A pentagon $(5-2)180$ 540°

b) An octagon $(8-2)180$ 1080°

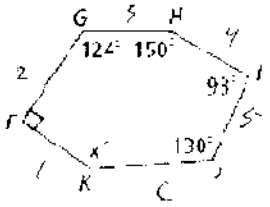
c) 

$(4-2)180$ 360°

d) 

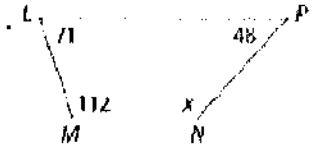
$(6-2)180$ 720°

2) Find the missing angles of the following shapes.

a) 

$x+587=720$

$x=133^\circ$

b) 

$x+231=360$

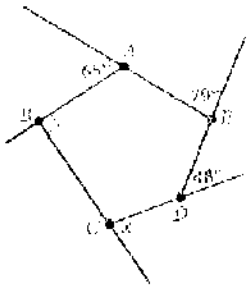
$x=129^\circ$

3) The measure of an interior angle of a regular polygon is given. Find the number of sides.

a) 120 $\frac{360}{180-120} = \frac{360}{60} =$ 6 sides

b) 160 $\frac{360}{180-160} =$ 18 sides.

4) Find the missing exterior angle.



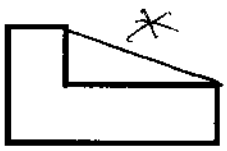
$x+282=360$

$x=78^\circ$

5) Classify the following as convex or concave.

a) 

Convex

b) 

Concave

Name: Key 3/29/2018 Geometry – Quiz 23

1) Find the sum of the interior angles of the following shapes:

a) A quadrilateral

$(4-2)180$

360°

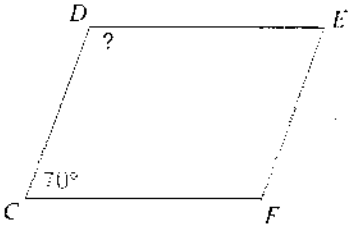
b) A triangle

180°

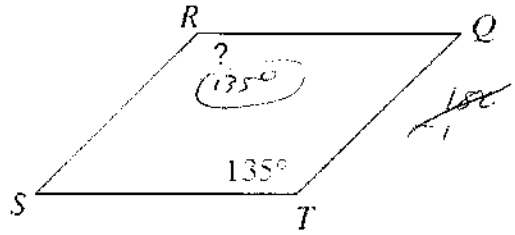
2) Find the missing angles.

a)

$180 - 70 = 110^\circ$



b)

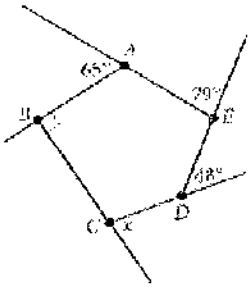


3) The measure of an interior angle of a regular polygon is given. Find the number of sides.

a) ~~100~~ 108 $\frac{360}{180-108} =$ ~~5 sides~~ 5 sides.

b) 160 $\frac{360}{180-160} =$ 18 sides

4) Find the missing exterior angle.

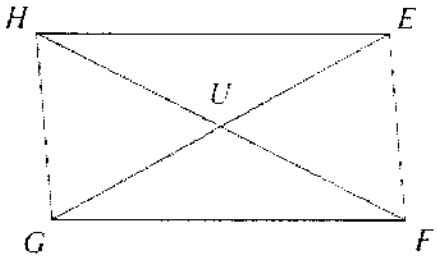


$90 + 65 + 79 + 48 + x = 360$

$x = 78^\circ$

5) The following shapes are parallelograms. Use the information given to find x.

a) $UH = 19, FH = 5x - 7$

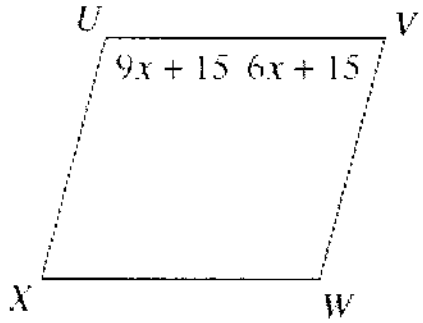


$19 + 19 = 5x - 7$

$5x = 45$

$x = 9$

b)



$9x + 15 + 6x + 15 = 180$

$15x = 150$

$x = 10$

Name: 4/6/2018 Geometry – Quiz 24

1) Show that the following points form a parallelogram. Use any method you want.

$P(2,2), Q(1,-3), R(-4,2), S(-3,7)$

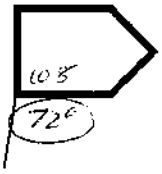
dist. $PQ = \sqrt{5^2+1^2} = \sqrt{26}$ $QR = \sqrt{5^2+5^2} = 5\sqrt{2}$ $RS = \sqrt{26}$ ✓ $SP = 5\sqrt{2}$

Slopes ✓ $PQ = \frac{-5}{-1} = 5$ $QR = \frac{5}{-5} = -1$ $RS = \frac{5}{1} = 5$ $SP = \frac{5}{-5} = -1$

2) The following shapes are regular. Find an exterior angle.

a) triangle

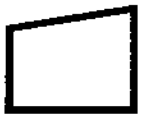
b) $\frac{(5-2)180}{5}$



3) Find the sum of the interior angles for the following shapes.

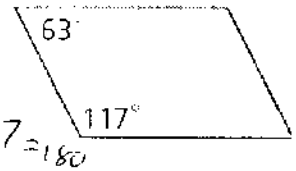
a) octagon $(8-2)180$ 1080

b) 360°



4) Determine if each quadrilateral must be a parallelogram. Justify your answer.

a)

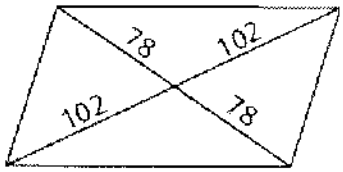


$63+117=180$

✓ seems like it because 1 consec. $\angle$ is suppl. Need (2)

NO

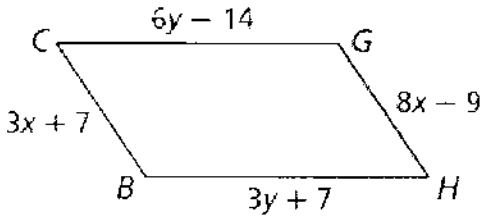
b)



yes. diag. bisect each other

5) The following shapes are parallelograms. Solve for the missing variables.

a)



$6y-14 = 3y+7$

$-3y+14 \quad -3y+14$

$\frac{3y}{3} = \frac{21}{3}$

$y = 7$

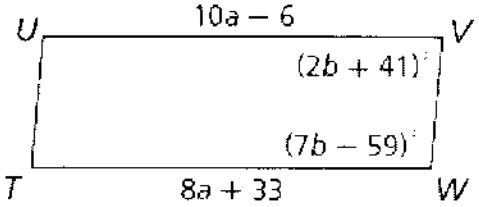
$3x+7 = 8x-9$

$-8x-7 \quad -8x-7$

$-5x = -16$

$x = 3.2$

b)



$2b+41+7b-59 = 180$

$9b-18 = 180$

$+18 \quad +18$

$9b = 198$

$b = 22$

$10a-6 = 8a+33$

$-8a+6 \quad -8a+6$

$2a = 39$

$a = \frac{39}{2} = 19.5$

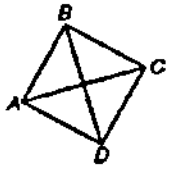
Name: Key 4/13/2018 Geometry – Quiz 25

1) Find the lengths and slopes of the diagonals to determine whether a parallelogram with the given vertices is a rectangle, rhombus, or square. Give ALL names that apply.

$E(-2,-4), F(0,-1), G(-3,1), H(-5,-2)$ llgram, rectangle, Rhombus, Square.

EG	Slope of EG	FH	Slope of FH
$\sqrt{(-3-{-2})^2+(1-{-4})^2}$	$\frac{5}{-1}=-5$	$\sqrt{(-5-0)^2+(-2-{-1})^2}$	$\frac{-1}{-5}=\frac{1}{5}$
$\sqrt{26}$		$\sqrt{26}$	

2) Use the figure on the right to determine whether each conclusion is valid. If not, tell what additional information is needed to make it valid.



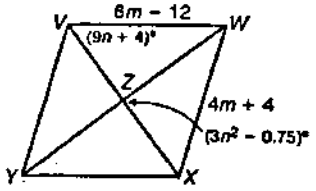
a) **Given:** $\overline{AC}$ and $\overline{BD}$ bisect each other. $AB = BC$. **Conclusion:** ABCD is a square.

invalid, need $AC = BD$

b) **Given:** $AB = BC = CD = DA$ and $AC = BD$ **Conclusion:** ABCD is a square.

valid.

3) VWXY is a rhombus. Find each measure:



a) XY = 36

b) $m\angle YVW =$ ~~57.5°~~ 107°

c) $m\angle VYX =$ ~~126.5°~~ 73°

d) $m\angle XYZ =$ ~~63.25°~~ 36.5°

$6m-12=4m+4$

$2m=16$

$m=8$

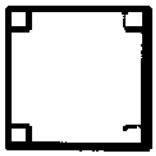
$3n^2-.75=90$

$3n^2=90.75$

$\sqrt{n^2}=\sqrt{30.25} \Rightarrow n=5.5$

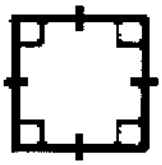
4) Give ALL the possible names of the following quadrilaterals that you KNOW the follow shapes are.

a)



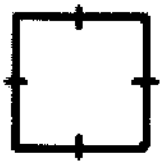
llgram rectangle.

b)



llgram rectangle rhombus Square

c)



llgram rhombus.