Name: Key Date: 12/18/2015 Geometry – Semester Test

1) Fill in the blanks for calculating the slope of a line given two points: (x_1, y_1) and (x_2, y_2).

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

(1) 2) If two angles are complementary, then their sum is ~~180~~ 90°.

3) You have $\angle ABC$ with T on the interior.

(4) a) Draw a picture for this scenario

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

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

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

(2) 5) Define an angle and state its units.

2 rays share a common end point, degrees.

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

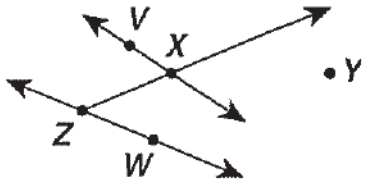
a) $67°$ 113° b) $x°$ $180-x$.

(3) 7) MATCHING!!

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.

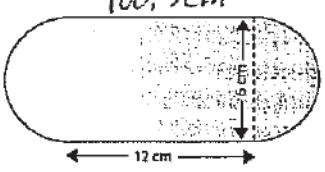
(2) 8) From the picture on the right, fill in the following chart.

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

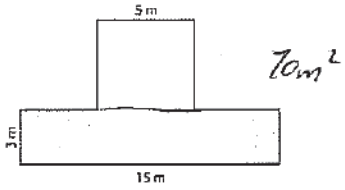


(6) 9) Find the area of the following shapes:

a) 100, $3cm^2$



b) $70m^2$



(3) 10) A circle has a diameter of 20.

a) What is the area of the circle? $100\pi \approx 314$

b) What is the circumference? $20\pi \approx 62.8$

c) What is the radius? 10

(1) 11) Given: 2, 3, 6, 18, ...

What is the next term in the sequence?

108.

(5) 12) Given: If you bring me a cookie, then you will pass this test.
a) What is the hypothesis? b) What is the conclusion?
c) State the converse: If pass, then cookie.
d) State the inverse: If no cookie, then fail.
e) State the contrapositive: If fail, then no cookie.

(8) 13) Find the distance between the following points AND the midpoints. Write your answers in the simplest form.
a) $(1,-2)$ & $(2,0)$ $M(\frac{3}{2},-1)$ $d=\sqrt{5}$
b) $(-4,7)$ & $(-4,-2)$ $d=9$ $M(-4,\frac{5}{2})$

(3) 14) Solve the following equation and justify each step.

$2(x-3)=10$

Statements	Reasons

(6) 15) Solve for the variable in the given problems:
a) $4z°$, $(3z+6)°$ $z=12$

b) $(3x+5)°$, $(6x-16)°$ $x=11$.

(4) 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? 3ft.
(4) b) AB is $2x+10$, AC is $x+2$ and BC is $5x$. What is the length of AB? $x=$ 2
(4) c) AB is $14-x$ long, C is the midpoint of AB, and AC is $3x$. What is the length of BC? $x=2$

(2) 17) Given: A, Z, B, Y, C, X, . . D, W, E
What is the next 3 terms in the pattern?

(6) $m\angle ABC = 8x°$

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

(3) 18) Find the missing angles given the following information.
a) $m\angle 2 = 155°, m\angle 3 = ?$ $25°$
b) $m\angle 1 = 60°, m\angle 8 = ?$ $60°$

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

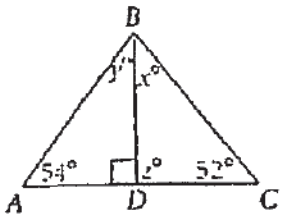
E	$\angle 1$ and $\angle 3$	Alternate Interior Angles A
C	$\angle 2$ and $\angle 3$	Alternate Exterior Angles B
B	$\angle 5$ and $\angle 4$	Same-side Interior angles C
D	$\angle 1$ and $\angle 4$	Same-side Exterior angles D
F	$\angle 8$ and $\angle 3$	Corresponding Angles E
B	$\angle 1$ and $\angle 8$	Vertical Angles F
A	$\angle 2$ and $\angle 7$	None of these G
C	$\angle 6$ and $\angle 7$	

(6) 20) Given the following pairs of points, calculate the slope of the line that passes through them.
a) $A(1,0), B(0,-2)$ $m=\frac{-2}{-1}=2$
b) $C(3,4), D(5,3)$ $m=-\frac{1}{2}$
c) $E(2,7), F(4,11)$ $m=\frac{4}{2}=2$

(3) 21) For the above lines ($\overleftrightarrow{AB}, \overleftrightarrow{CD}$, and $\overleftrightarrow{EF}$), which lines are parallel and which are perpendicular? There may by more than one that are parallel/perpendicular.
$\overleftrightarrow{AB} \parallel \overleftrightarrow{EF}$ $\overleftrightarrow{AB} \perp \overleftrightarrow{CD}$ $\overleftrightarrow{EF} \perp \overleftrightarrow{CD}$

Name: Key
Geometry Test 4
1/28/2015

(3) 1) a) Using the picture on the right, solve for x, y, and z. 36° 36° 90°



b) Classify the following triangles by their angles:

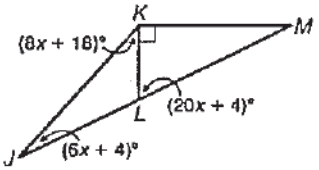
$\Delta ABC, \Delta ABD, \Delta BCD$

acute right right

(3) 2) Match the following transformations with their descriptions.

B $(x,y) \rightarrow (x-4,y)$	A) Reflection across the x-axis
E $(x,y) \rightarrow (4x,4y)$	B) Shift left by 4
D $(x,y) \rightarrow (-x,y)$	C) Rotation clockwise 90°
C $(x,y) \rightarrow (-y,x)$	D) Reflection across the y-axis
A $(x,y) \rightarrow (x,-y)$	E) Dilation by a factor of 4
F $(x,y) \rightarrow (x,y-4)$	F) Shift ~~up~~ down by 4

(3) 3) Answer the questions about the following figure.



$2x+4 = 8x+18+6x+4$

$6x = 18$

$x = 3$

A) What is $m\angle KLM$? 64°

B) What is $m\angle M$? 27°.

4) The angles of a specific triangle are in a ratio of 3:7:8. What are the angles?

(2) $\frac{180}{18} = 10$ 30, 70, 80.

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

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

a) (-4, 3) b) ~~(3, 4)~~ (-12, 12) c) (12, -12) d) (12, 12).

6) Suppose $\Delta BRD \cong \Delta JUS$. Complete the following.

(3) a) $\angle J \cong$ $\angle B$. b) $m\angle U$ $=m\angle R$. c) $JS =$ BD

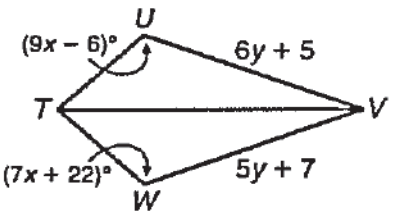
d) $\Delta DBR \cong$ ΔSJU e) $\overline{BR} \cong \overline{JU}$ d) $\Delta USJ \cong$ ΔRDB.

7) Given: $\Delta TUV \cong \Delta TWV$. Find $m\angle U$ and UV.

(3) $9x-6 = 7x+22$. 120° 17

$2x = 28$

$x = 14$



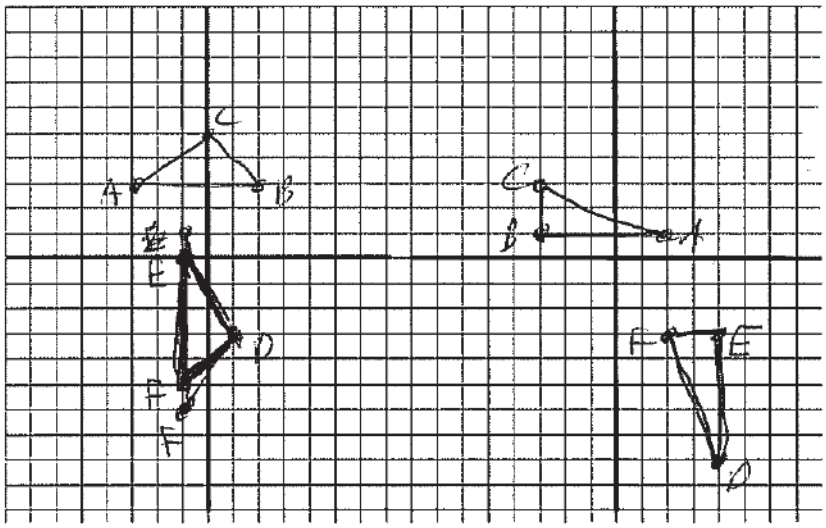
$y = 2$.

8) Use the graphs given to plot the following sets of points. Draw ΔABC and ΔDEF.

(4) Complete the statement $\Delta ABC \cong$ _____ for each.

a) $A(-3,3), B(2,3), C(0,5)$
$E(-1,1), D(1,-3), F(-1,-6)$ $\triangle EFD$

b) $A(2,1), B(-3,1), C(-3,3)$
$F(2,-3), E(4,-3), D(4,-8)$ $\triangle DEF$



(3) 9) a) What is the only transformation that changes the size or shape of an object/picture? dilation.

b) There were two important theorems we talked about for sect 4.3. 1) The Ext. angle theorem states that the Ext. angle is equal to the sum of the two remote interior angles. 2) The Third angle theorem states that if two angles of one triangle are equal to two angles of another triangle, then the third. angles are also equal.

10) $\Delta MNP \cong \Delta RST$. What are x and y?

(3)

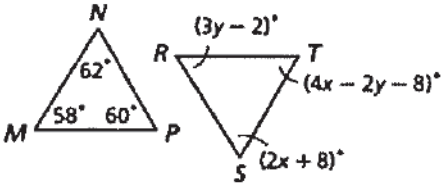
$3y-2=58$

$y=20$

$2x+8=62$

$2x=54$

$x=27$



Name: Key

Geometry Test 5

2/23/2016

1) For the steps of **dividing** fractions, fill in the following blanks.

(4)

1) Get everything in fraction form.
2) Reciprocate the fraction after the division sign.
3) Multiply as Normal
   a) Factor the numerators and denominators
   b) Cross off things that are on both the top and bottom.
   c) Multiply the tops and the bottoms.

2) For the steps of adding and subtracting fractions, fill in the following blanks.

(3)

1) Get everything in fraction. form.
2) Find a common denominator using the LCM.
   -Multiply the top and bottom by what is missing.
3) Add/subtract the tops as normal.
4) simplify the fraction.

3) Add/subtract the following fractions.

(8)

a) $\frac{3}{5} - \frac{7}{5} = -\frac{4}{5}$

b) $\frac{1}{5} - \frac{3}{5} + \frac{2}{5} + \left(\frac{4}{5}\right)$

c) $9\frac{3}{7} - 5\frac{3}{7} + \frac{4}{7} + \frac{2}{7}$

$4\frac{6}{7}$

d) $\frac{1}{8} - 2\frac{3}{8} + 4\frac{5}{8}$ $\left(2\frac{3}{8}\right)$

4) Add/subtract the following fractions.

(12)

a) $\frac{1}{3 \cdot 24} - \frac{3 \cdot 4}{18 \cdot 4} = \frac{-9}{72} = \left(\frac{-1}{8}\right)$

$24 = 2^3 \cdot 3$

$18 = 2 \cdot 3^2$

$2^3 \cdot 3^2 = 72.$

b) $\frac{2}{6} - \frac{3 \cdot 3}{16 \cdot 3}$ $\left(\frac{7}{48}\right)$

$\frac{2^4}{2 \cdot 3}$

$2^4 \cdot 3$

c) $\frac{13}{3 \cdot 28} - \frac{7 \cdot 7}{12 \cdot 7}$

$28 = 2^2 \cdot 7$

$12 = 2^2 \cdot 3$

$2^2 \cdot 3 \cdot 7$

$39 - 49 = \frac{-10}{84} = \left(\frac{-5}{42}\right)$

d) $\frac{2 \cdot 17}{2 \cdot 39} - \frac{13 \cdot 3}{26 \cdot 3}$ $\left(\frac{-5}{78}\right)$

$34 - 39$

$\frac{3 \cdot 13}{2 \cdot 13}$

$2 \cdot 3 \cdot 13$

5) Write the decimal/fractional equivalence of the following.

(4)

a) $\frac{3}{4}$ .75

b) $\frac{2}{5}$ .4

c) .125 1/8

d) .5 1/2.

6) Multiply the following fractions.

(8)

a) $\frac{28}{4} * \frac{12}{7} = 12$

b) $\frac{18}{21} * \frac{14}{3} = \left(4\right)$

c) $\frac{9}{8} * \frac{18}{12} = \frac{9}{4}$

d) $3\frac{1}{8} * 6\frac{5}{8}$ $\frac{25}{8} \cdot \frac{53}{8} = \left(\frac{1325}{64}\right)$

7) Divide the following fractions.

a) $\frac{14}{4} \div \frac{18}{20} = \left(\frac{35}{9}\right)$

b) $2\frac{3}{7} \div 1\frac{1}{7}$ $\frac{17}{7} \cdot \frac{7}{8} = \left(\frac{17}{8}\right)$

c) $\frac{9}{4} \div \frac{18}{12} = \left(\frac{3}{2}\right)$

d) $4\frac{5}{8} \div 2\frac{3}{8}$ $\frac{37}{8} \cdot \frac{8}{19} = \left(\frac{37}{19}\right)$

8) There are several theorems that allow you to prove triangles are congruent. A) What do their abbreviations stand for? B) Put an X through the one that does not work. C) Circle the ones that only work with right triangles. D) Draw a single triangle to represent each theorem. The abbreviations are:

(8)

SSS 

SAS

~~SSA~~

ASA

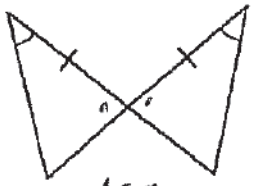
AAS

(HL)

(LL)

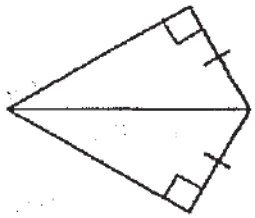
9) For the following three pictures, state (if any) the theorem/s that would prove the triangles are congruent.

(3)



ASA

AAS or ASA.



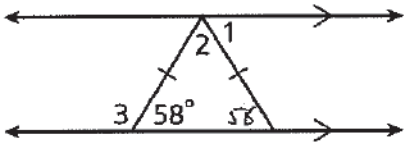
HL.

10)

(6)

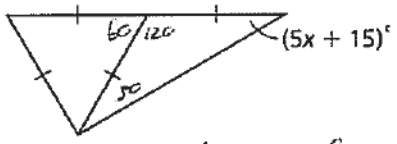
58° 64° 122°

Find $m\angle 1, m\angle 2, m\angle 3$



(3)

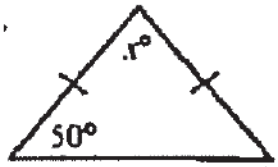
Find "x".



8 6

80

Find "x".



11) Determine if ΔKGH is similar to ΔOLM. $O(-2,4), L(-2,-4), M(4,-4)$ and $K(3,-1), G(-1,-1), H(-1,2)$. Use the distance formula and proportions to determine this.

(4)

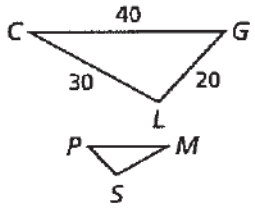
$\sqrt{36+64} = 10$

$\frac{6}{3} = \frac{8}{4} = \frac{10}{5}$ ✓

12) The similarity ratio of ΔCGL to ΔMPS is $\frac{20}{5}$. What is PS?

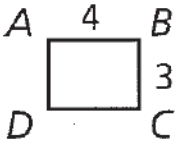
(3)

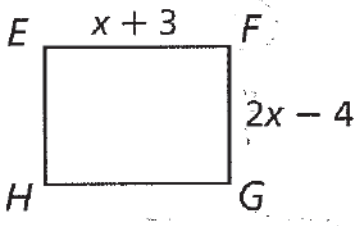
$\frac{20}{5} = \frac{20}{x}$ $x = 5$



13) What value of x $ABCD \sim EFGH$ makes the rectangles similar?

(3)





$\frac{x+3}{4} = \frac{2x-4}{3}$

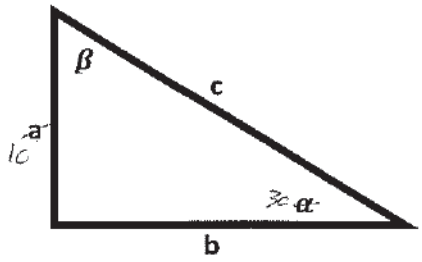
$3x+9 = 8x-16$.

$25 = 5x$

$x = 5$

Name: key
Geometry – Test 6
3/22/2016

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



(12)

Given:	α	β	a	b	c
a)	30°	60°	10	17.32	20
b)	65°	25°	.906	.423	1
c)	55°	35°	42.84	30	52.3
d)	80°	10°	4	.71	4.06

2) Fill in the following table for the angles given.

(5)

$\theta \rightarrow$	a) 35°	b) 60°	c) 45°
$\sin(\theta)$	.5736	$\sqrt{3}/2$	$\sqrt{2}/2$
$\cos(\theta)$	.8192	$1/2$	$\sqrt{2}/2$
$\tan(\theta)$	.7002	$\sqrt{3}$	1

3) Fill in the following table.

(5)

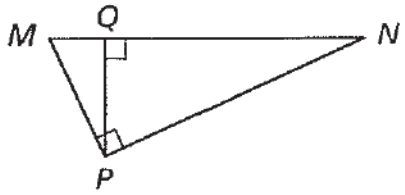
$\theta \rightarrow$	a) ? 30°	b) ? 53°	c) ? 62°
$\sin(\theta)$	1/2	.7986	.8829
$\cos(\theta)$	$\sqrt{3}/2$	.6018	.4695
$\tan(\theta)$	$\sqrt{3}/3$	1.327	1.8807

4) Use your tables to find the following angles to the nearest degree.

a) $\tan^{-1}(21445)$ b) $\sin^{-1}(.5878)$ c) Arccos(.5878)

(3) 65° 36° 54°

5) Write a similarity statement comparing the three triangles on the right.



(2) $\triangle MQP \sim \triangle PQN \sim \triangle MPN$.

6) If the ratio between two triangles is: $\frac{1}{3}$.

a) The area of the smaller triangle is: $30in^2$. What is the area of the larger triangle? 270in²

b) The perimeter of the larger triangle is: $30ft$. What is the perimeter of the smaller triangle? 10ft

(3)

$\frac{1}{9} = \frac{30}{x}$ $\frac{1}{3} = \frac{x}{30}$ $x = 10$

7) Give the definitions of the following trigonometric functions. You may use the abbreviations that I used in class.

$\sin(\theta) =$ opp / hyp.

$\cos(\theta) =$ adj / hyp

$\tan(\theta) =$ opp / adj

(3)

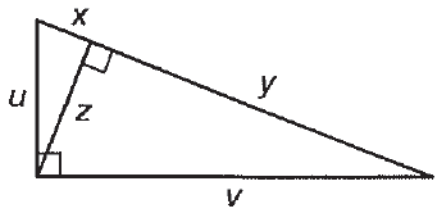
8) Find the geometric mean of each pair of numbers. Give your answer in simplest radical form.

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

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

(4)

9) Use the picture on the right to complete each equation.



a) $\frac{x}{z} = \frac{u}{?}$ v

b) $\frac{x+y}{v} = \frac{?}{z}$ u

(3)

10) Classify each answer as either an angle of elevation or depression.

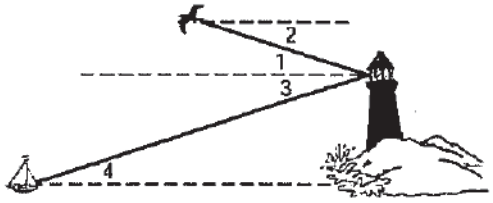
∠1 elevation

∠2 depression

∠3 depression

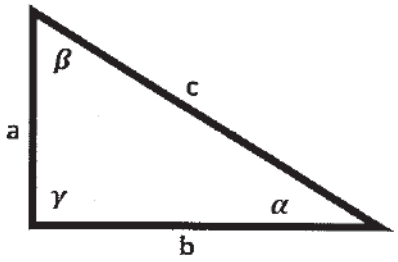
∠4 elevation.

(4)



Name:_____
Geometry – Test 7
5/3/2016

$\frac{8.5}{\sin(17)} = \frac{x}{\sin(135)}$



1) Using the triangle, find the missing values of the triangle for each situation. The picture is clearly not drawn to scale.

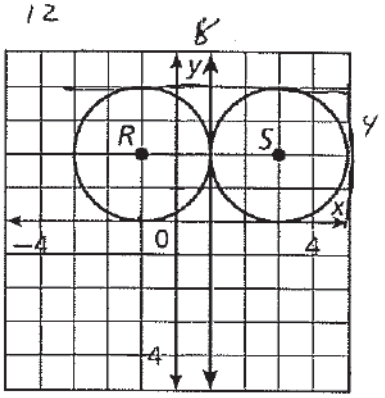
Given:	α	β	γ	a	b	c
a)	28°	17°	135°	13.6	8.5	20.56
b)	67°	27.3°	85.7°	12	5.8	13

$x^2 = 5.8^2 + 13^2 - 2(5.8)(13)\cos(67)$

2) Find the component form of the vector $\overline{AB}$

$\langle 5, -7 \rangle$ $A(-6,7)$ & $B(-1,0)$ $\frac{\sin(\gamma)}{13} = \frac{\sin(67)}{12}$

3)



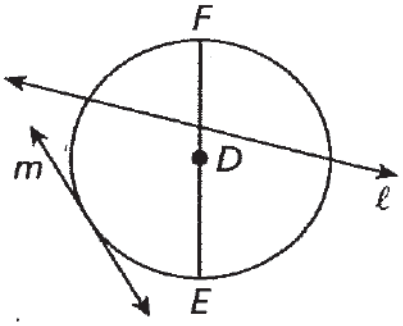
a) What is the radius of $\odot R$? 2
b) What is the diameter of $\odot S$? 4
c) What is the point of tangency? (1, 2)
d) What is the equation of the line of the tangent? $x = 1$
e) What is the area of the rectangle containing the two circles? 32
f) What is the area of $\odot S$? 4π.
d) What is the area of the region left of the rectangle if the two circles were cut out of it? $32 - 8\pi = 6.88$

4) What is the magnitude of the each of the following vectors? Write your answer in the simplest radical form.
a) $< 5, -5 >$ $\sqrt{5^2+5^2} = 5\sqrt{2}$
b) $< -6, 8 >$ $\sqrt{6^2+8^2} = 10$

5) What is the law of sines? $\frac{a}{\sin(\alpha)} = \frac{b}{\sin(\beta)} = \frac{c}{\sin(\gamma)}$

6) What is the law of cosines? $c^2 = a^2 + b^2 - 2ab\cos(\gamma)$

7) Using the circle on the right, identify the following lines and segments.



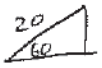
a) $\overline{DE}$ radius
b) line l secant.
c) $\overline{FE}$ diameter
d) line m tangent.

8) Find each vector sum.
a) $< 0, -1 > + < 7, -8 >$ $\langle 7, -9 \rangle$

b) $< 9, 10 > + < -3, 3 >$ $\langle 6, 13 \rangle$

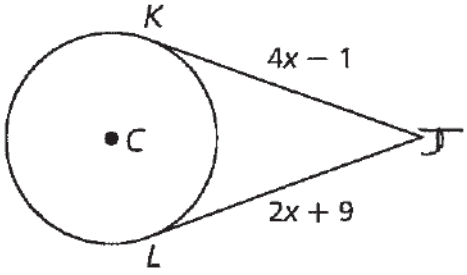
9) Find a vector in component form for the following: $\sin(60) = \frac{x}{20}$

Magnitude 20 and direction 60°



$\langle 10, 17.3 \rangle$

10) $\overline{JK}$ and $\overline{JL}$ are tangent to $\odot C$. What is JK?



$4x - 1 = 2x + 9$

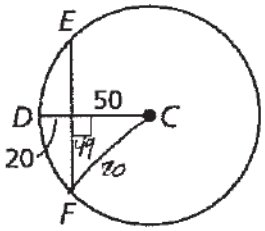
$2x = 10$

$x = 5$

11) Find the following measures:

a) CF 20

b) EF 98

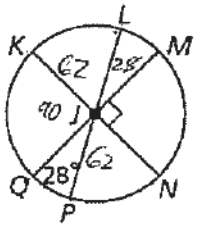


12) Find the following measures:

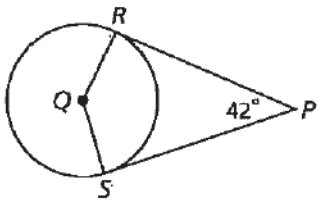
a) $m\angle LJK$ ~~360°~~ 62°

b) $m\overset{\frown}{MP}$ 152°

c) $m\overset{\frown}{QML}$ 208°

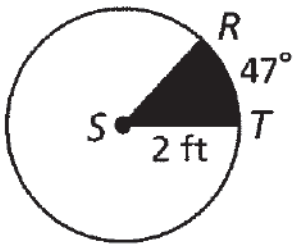


13) Find $m\angle RQS$. 138°



14) Find the area of sector RST

$\frac{47}{360}\pi(2)^2 = 1.64$

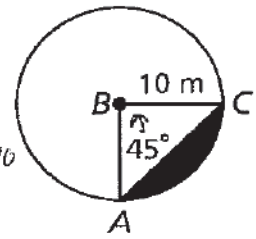


15) Find the area of the segment.

$A = A - A$

$= \frac{45}{360}\pi(10)^2 - \frac{1}{2}\,10 \cdot 10 \cdot \sin(45)$

$= 3.89\ m^2$



$= \frac{90}{360}\pi(10)^2 - \frac{1}{2}\,10 \cdot 10$

$= 28.5\ m^2$

Name: Key
1/8/2016
Geometry Quiz

(3) 1) Use the point $(-1, 4)$ as the **STARTING** point **each time** and perform the following transformations to it.

a) Shift right 2 $(1, 4)$
b) Down 4 $(-1, 0)$
c) Reflect across the x-axis $(-1, -4)$
d) Rotate clockwise 90° $(-4, -1)$

2) Match the following transformations with their descriptions.

(3)

D $(x, y) \rightarrow (x + 2, y)$	A) Reflection across the x-axis
C $(x, y) \rightarrow (2x, 2y)$	B) Reflection across the y-axis
B $(x, y) \rightarrow (-x, y)$	C) Dilation by a factor of 2
E $(x, y) \rightarrow (-y, x)$	D) Shift right by 2
A $(x, y) \rightarrow (x, -y)$	E) Rotation clockwise 90°

3) Use the point $(2, 3)$ as the starting point and perform the following **consecutive** transformations on it.

(3)

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

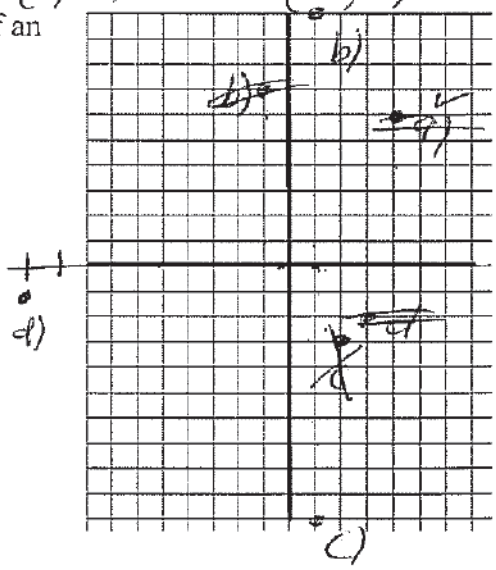
a) $(4, 6)$ b) ~~$(-1, 7)$~~ $(1, 10)$ c) ~~$(2, 3)$~~ $(1, -10)$ d) ~~$(3, 2)$~~ $(-10, -1)$

4) What is the only transformation that changes the size or shape of an object/picture?

(1) dilation.

5) Using the graph paper provided, graph and label the points from question #3.

(3)

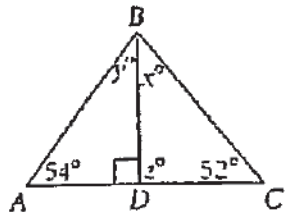


Name: Key

1/22/2016

Geometry Quiz

1) a) Using the picture on the right, solve for x, y, and z. 38° 36° 90°



b) Classify the following triangles by their angles:

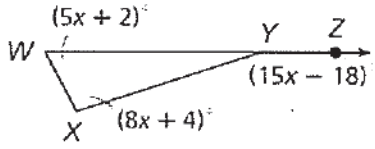
$\Delta ABC, \Delta ABD, \Delta BCD$

(3) acute right right

2) There were two important theorems we talked about for sect 4.3. 1) The Ext. angle theorem states that the ext angle is equal to the sum of the two remote interior angles. 2) The Third angle theorem states that if two angles of one triangle are equal to two angles of another triangle, then the Third. angles are also equal.

(2)

3) Given the following triangle, solve for $m\angle XYZ = 162°$.



$15x - 18 = 5x + 8x + 6$

(3) $2x = 24$

$x = 12$.

4) The angles of a specific triangle are in a ratio of 1:2:3. What are the angles?

30, 60, 90.

(3)

5) Classify each of the following triangles by both their angles and their sides.

a) ΔADC

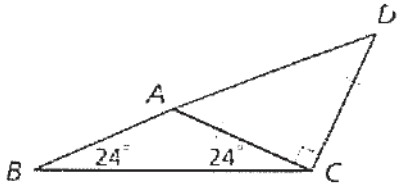
(3) right iso

b) ΔBCD

obtuse, scalene

c) ΔABC

obtuse, iso.



Name: Key

2/5/2016

Geometry Quiz

(5) 1) There are several theorems that allow you to prove triangles are congruent. A) What do their abbreviations stand for? B) Put an X through the one that does not work. C) Circle the ones that only work with right triangles. D) Draw a single triangle to represent each theorem. The abbreviations are:

SSS → side-side-side 

SAS → side-angle-side. 

~~SSA~~ → side-side-angle 

ASA → angle-side-angle 

AAS → angle-angle-side 

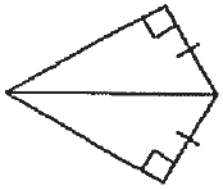
(HL) → hypotenuse - leg. 

(LL) → leg-leg 

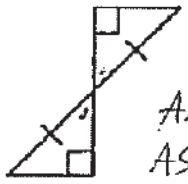
(2) 2) The Isosceles Triangle Theorem can be said two ways. 1) If two angles of a triangle are equal, then the opp. sides are also equal. 2) If two sides of a triangle are equal, then the opp. angles are also equal.

3) For the following three pictures, state (if any) the theorem/s that would prove the triangles are congruent.

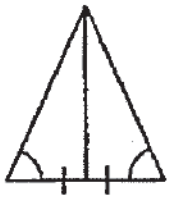
(3)



HL.



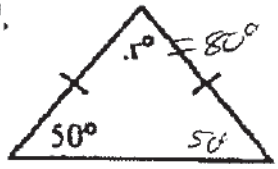
AAS
ASA

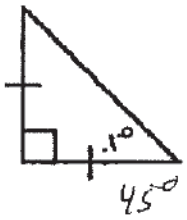


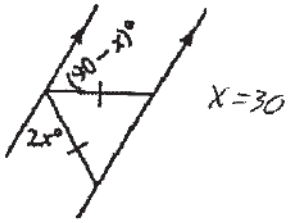
~~LL~~
none.

4) Find "x" in the following pictures.

(5).





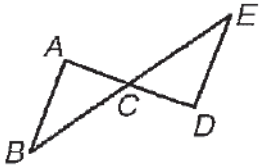


5) The Hatfield and McCoy families are feuding over some land. Neither family will be satisfied unless the two triangular fields are exactly the same size. You know that ***C*** is the midpoint of each of the intersecting segments. On the back, write a two-column proof that will settle the dispute.

(3)

Given: C is the midpoint of $\overline{AD}$ and $\overline{BE}$.

Prove: $\Delta ABC \cong \Delta DEC$



Name: Key

2/12/2016

Geometry Quiz

1) Write the decimal/fractional equivalence of the following.

a) $\frac{1}{4} = .25$

b) $\frac{1}{3} = .\overline{3}$

c) $.125 = \frac{1}{8}$

d) $.375 = \frac{3}{8}$

2) The Isosceles Triangle Theorem can be said two ways. 1) If two angles of a triangle are equal, then the opp. sides are also $\cong$. 2) If two sides of a triangle are equal, then the opp. angles are also $\cong$.

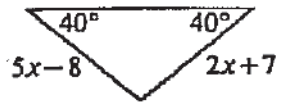
3) Multiply/divide the following fractions.

a) $\frac{4}{7} * \frac{20}{18} = \frac{20}{63}$

b) $\frac{4}{9} \div \frac{12}{18}$ $\frac{14}{9} \cdot \frac{18}{12} = \frac{2}{3}$

$\frac{82}{2}$

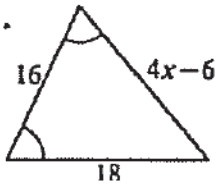
4) Find "x" in the following pictures.



$5x-8 = 2x+7$

$3x = 15$

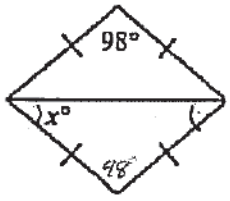
$x = 5$



$4x-6 = 18$

$4x = 24$

$x = 6$



$41°$

5) Add/subtraction the following fractions.

a) $\frac{3}{3\cdot 28} + \frac{5}{12\cdot 7} = \frac{44}{84} = \frac{11}{21}$

b) $\frac{7}{4\cdot 12} - \frac{3}{16\cdot 3} = \frac{14}{48}$

$28 = 2^2 \cdot 7$

$12 = 2^2 \cdot 3$

$2^2 \cdot 3 \cdot 7$

$28 - 9 = 19$

6) Solve the following proportions.

a) $\frac{16.5}{x} = \frac{132}{84}$ $x = \frac{16.5 \cdot 84}{132}$

b) $\frac{35}{20} = \frac{13-x}{28}$ $13 - \frac{35 \cdot 28}{20} = x$

Name: Key

2/18/2016

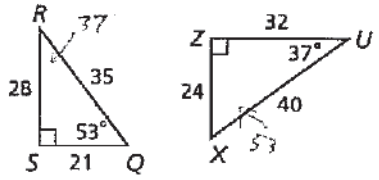
Geometry Quiz

1) Given the triangles on the right, determine if they are similar. If ~~they~~ they are, write a similarity statement. $\triangle RSQ$ and $\triangle UXZ$

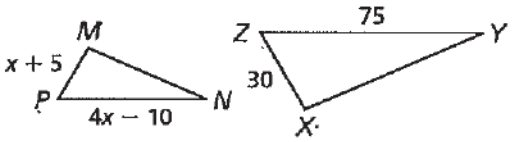
$\frac{32}{28} = \frac{24}{21} = \frac{40}{35}$ ✓

$\frac{8}{7} \quad \frac{8}{7} \quad \frac{8}{7}$ ✓

$\triangle RQS \sim \triangle UXZ$



2) Given: $\Delta MNP \sim \Delta XYZ$. Find x.



$\frac{x+5}{30} = \frac{4x-10}{75}$

$75x + 5 \cdot 75 = 120x - 300$ (45)

$675 = 45x$

$x = 15$

3) Triangle ABC is transformed into the image EFG. What is the scale factor of ABC to EFG?
$A(4,8), B(0,4), C(4,0)$ and $E(3,6), F(0,3), G(3,0)$

$\frac{\sqrt{32}}{\sqrt{18}} = \frac{4}{3}$ $\quad 9+9$

4) Fill in the blanks for the distance formula: $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

5) Determine if ΔKGH is similar to ΔOLM. $O(1,6), L(1,2), M(4,2)$ and $K(2,12), G(2,4), H(8,4)$. Yes.

$OL = \sqrt{16} = 4$ $\quad KG = \sqrt{64} = 8$

$OM = \sqrt{16+9} = \sqrt{25} = 5$ $\quad KH = \sqrt{64+36} = 10$

$LM = \sqrt{9} = 3$ $\quad GH = \sqrt{36} = 6$

6) Solve the following proportions.

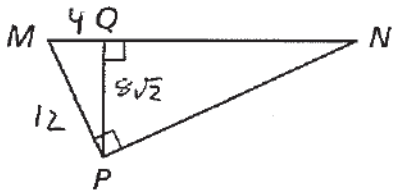
a) $\frac{16.5}{x} = \frac{132}{84}$ $\quad x = 10.5$

b) $\frac{35}{20} = \frac{13-x}{28}$ $\quad x = -36$

Name: Key
3/11/2016
Geometry Quiz

$\sqrt{128} =$

1) Write a similarity statement comparing the three triangles on the right.



$\triangle MQP \sim \triangle PQN \sim \triangle MPN$

2) Use the triangle above to answer the following question. Given: $MP = 12$ & $MQ = 4$. What are the measures of: QN, QP, and MQ?

32 $8\sqrt{2}$ 4

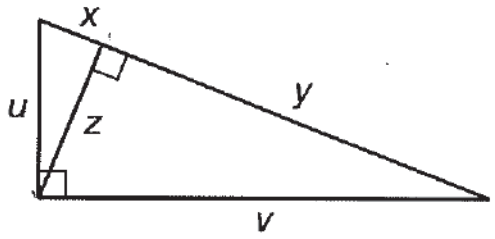
$\frac{4}{8\sqrt{2}} = \frac{8\sqrt{2}}{x} \Rightarrow \frac{4x}{4} = \frac{128}{4}$ $x =$

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

a) 10 and 45 $15\sqrt{2}$

b) 3 and 15 $3\sqrt{5}$

4) Use the picture on the right to complete each equation.



a) $\frac{x}{z} = \frac{z}{?}$ y

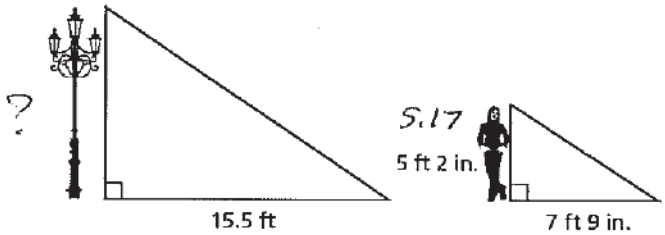
b) $\frac{x+y}{v} = \frac{v}{?}$ y

5) If the ratio between two triangles is: $\frac{1}{3}$.

a) What is the ratio between their perimeters? $\frac{1}{3}$

b) What is the ratio between their areas? $\frac{1}{9}$

6) Jocelynn is 5'2" tall. To find the height of a light pole, she measured her shadow and the pole's shadow. What is the height of the pole?



7.75

$\frac{x}{15.5} = \frac{5.17}{7.75}$

$x = 10.34$ ft

Name: Key
3/18/2016
Geometry Quiz

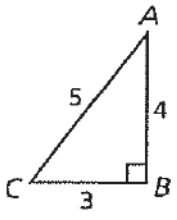
1) Give the definitions of the following trigonometric functions. You may use the abbreviations that I used in class

$\sin(\theta) = \frac{opp}{hyp}$

$\cos(\theta) = \frac{adj}{hyp}$

$\tan(\theta) = \frac{opp}{adj}$

2) Use the triangle on the right to answer the following questions.



a) $\sin A = \frac{3}{5}$ b) $\cos C = \frac{3}{5}$ c) $\tan A = \frac{3}{4}$ d) $\sin C = \frac{4}{5}$

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

a) 15 and 35 $5\sqrt{21}$

b) 30 and 20 $10\sqrt{6}$

4) Use your trig charts to find the following values.

a) $\sin^{-1}\left(\frac{1}{2}\right) = 30°$

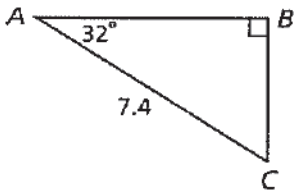
b) $\cos^{-1}\left(\frac{\sqrt{3}}{2}\right) = 30°$

c) $\tan^{-1}(1) = 45°$

d) $\sin^{-1}\left(\frac{\sqrt{2}}{2}\right) = 45°$

5) Find all the missing measurements of ΔABC

$\cos(32) = \frac{x}{7.4}$

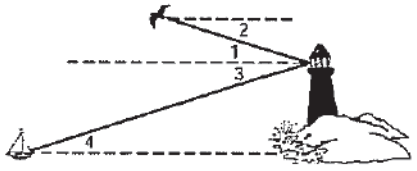


$m\angle C = 58°$

$AB = 6.28$

$BC = 3.92$

6) Classify each answer as either an angle of elevation or depression.



$\angle 1$ elevation

$\angle 2$ depression.

$\angle 3$ depression

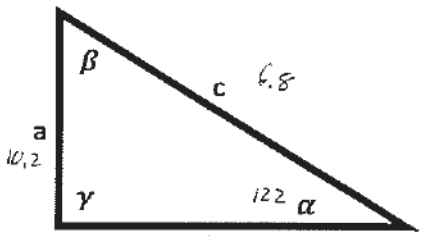
$\angle 4$ elevation.

Name: Key.

4/8/2016

Geometry Quiz

1) Using the triangle, find the missing values of the triangle for each situation. The picture is clearly not drawn to scale.



$\frac{b}{\sin 23.6} = \frac{10.2}{\sin 122}$

Given:	α	β	γ	Ag	b	c
a)	122°	23.6	34.4	10.2	4.82	6.8
b)	28°	17°	135°	13.6	8.5	20.6
c)	67°	~~24.2°~~ 26.4°	~~88.8°~~ 85.7	~~13.1~~ 11.12	5.8	13
d)	78.9°	22.2°	78.9°	13	5	13

2) Find the component form of the vector $\overrightarrow{AB}$

$A(5,-9)\ \&\ B(-2,10)$ $\quad \langle -7, 19 \rangle$

3) What is the magnitude of the each of the following vectors? Write your answer in the simplest radical form.

a) $< 8,4 >$ $\quad \sqrt{64+16} = \sqrt{80} = 4\sqrt{5}$

b) $< -7,10 >$ $\quad \sqrt{149}$

4) Find each vector sum.

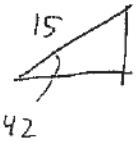
a) $< 1,2 > + < 0,6 >$ $\quad \langle 1, 8 \rangle$

b) $< -3,4 > + < 5,-2 >$ $\quad \langle 2, 2 \rangle$

5) Find a vector in component form for the following:

Magnitude 15 and direction 42°

$\langle 10.04, 11.1 \rangle$

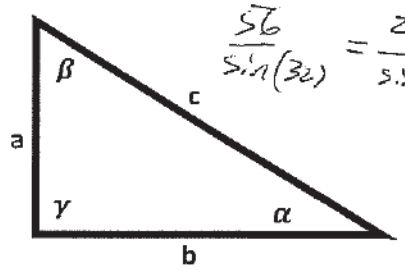


Name: Key

4/15/2016

Geometry Quiz

1) Using the triangle, find the missing values of the triangle for each situation. The picture is clearly not drawn to scale.



$\frac{56}{\sin(32)} = \frac{29}{\sin(\beta)}$

Given:	α	β	γ	a	b	c
a)	132.07°	15.93°	32°	78.45	29	56
b)	30°	20°	130°	12.43	8.5	19.04
c)	60°	32.54°	87.39°	11.27	7	13
d)	57.32	77.36	57.32	4	5	4

27.87 92.2 15

$\frac{8.5}{\sin(20)} = \frac{a}{\sin(30)}$

2) What is the law of sines?

$\frac{a}{\sin\alpha} = \frac{b}{\sin(\beta)} = \frac{c}{\sin(\gamma)}$

$\frac{11.27}{\sin(6)} = \frac{7}{\sin(\beta)}$

3) What is the law of cosines?

$c^2 = a^2 + b^2 - 2ab\cos(\gamma)$

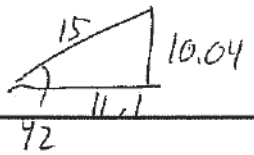
4) Find each vector sum.

a) $\langle 1, 2 \rangle + \langle 0, 6 \rangle$ $\langle 1, 8 \rangle$

b) $\langle -3, 4 \rangle + \langle 5, -2 \rangle$ $\langle 2, 2 \rangle$

5) Find a vector in component form for the following:

Magnitude 15 and direction 42°



$\langle 11.1, 10.04 \rangle$

$\sin(42) = \frac{y}{15}$

$\cos(42) = \frac{x}{15}$

Name: Key.

4/22/2016

Geometry Quiz

1) What are the titles of each of the following sections:

a) Sect 12.1 lines that intersect ⊙

b) Sect 12.3 Sector Area and Arc length.

c) Sect 12.5 Angle Relationships in circles

d) Sect 12.7 circles in the coordinate plane

2) Define the following terms:

a) Chord = segment whose endpoints lie on a circle.

b) Sector of a circle = region bounded by 2 radii of the circle and the intercepted arc.

c) Inscribed angle = angle whose vertex is on a ⊙ and whose sides contain chords of the circle.

d) Subtend = ~~as~~ chord or arc subtends an angle if its endpoints lie on the sides of the angle.

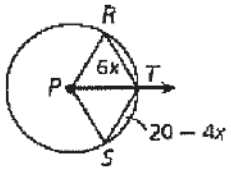
3) $\overrightarrow{PT}$ bisects $\angle RPS$. $RT = 6x$ & $ST = 20 - 4x$. What is RT?

$6x = 20 - 4x$

$10x = 20$

$x = 2$.

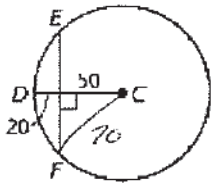
(12)



4) Find the following measures:

a) CF (70)

b) EF ~~48~~ (49)

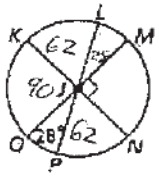


5) Find the following measures:

a) $m\angle LJK$ 62°

b) $m\overset{\frown}{MP}$ 152°

c) $m\overset{\frown}{QML}$ 208°



6) Find $m\angle RQS$.

138°