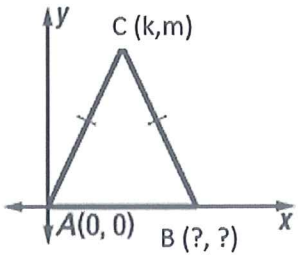
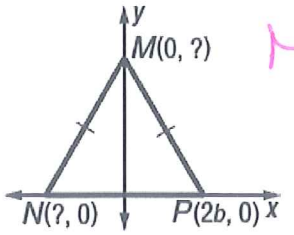
Unit 4 Triangles Midterm Exam Re-Teach 2016 Name: Key

1. Find the missing coordinates of the triangle.



B(2k, 0)

2. Find the missing coordinates of the triangle.



M(0, c)

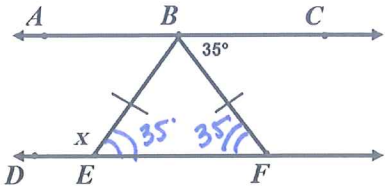
N(-2b, 0)

3. Classify the triangle by its sides and angles given the two angle measure are 12° and 84°.

Δ sum 84°

acute isosceles

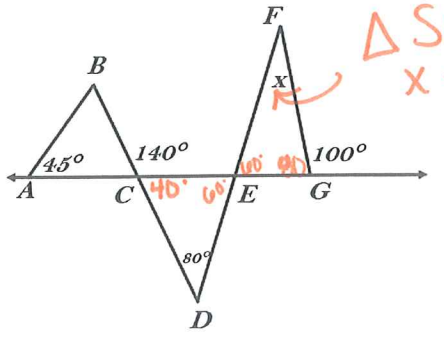
4. In the figure below, B is on $\overline{AC}$, E is on $\overline{DF}$, $\overline{AC}$ is parallel to $\overline{DF}$, and $\overline{BE}$ is congruent to $\overline{BF}$. What is the measure of <DEB?



x + 35 = 180° linear Pairs are suppl.

x = 145°

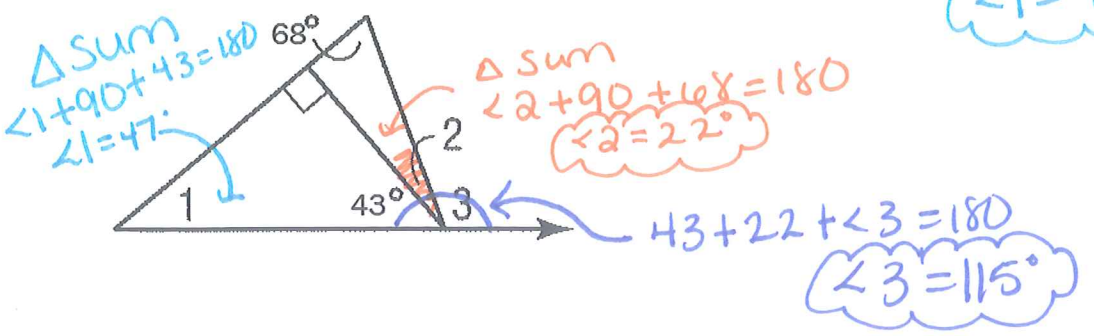
5. In the figure below, points A, C, E and G are collinear; B, C, D are collinear; and D, E, F are collinear. Angle measures are as marked and m< D is 80°. What is the measure of <EFG?



Δ Sum
x + 60 + 80 = 180

x = 40°

6. Find the measure of each numbered angle.



Δ Sum
∠1 + 90 + 43 = 180
∠1 = 47°

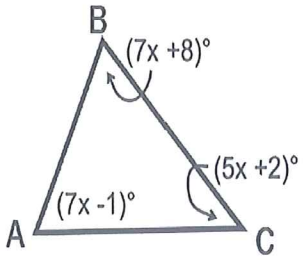
∠1 = 47°

Δ Sum
∠2 + 90 + 68 = 180
∠2 = 22°

43 + 22 + ∠3 = 180

∠3 = 115°

7. Amber, Brian, and Carson are friends that live close to one another. Which two friends have the shortest distance between them? Which two friends have the longest distance between them?



$7x+8+5x+2+7x-1=180$

$19x+9=180$

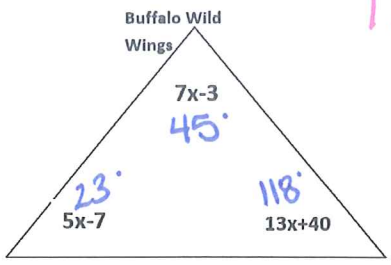
$x=9$

$x =$ 9 $m<A =$ 62° $m<B =$ 71° $m<C =$ 47°

What two friends have the shortest distance between them? Amber + Brian.
Why?
op. the smallest ∠ is the smallest side.

What two friends have the longest distance between them? Amber + Carson.
Why?
op. the greatest ∠ is the greatest side.

8. Partridge Creek, Buffalo Wild Wings, and Dakota High School form a triangle on a map. What route would have the shortest drive? (i.e. Which two buildings are closest together?) Show me mathematically



$7x-3+13x+40+5x-7=180$

$25x+30=180$

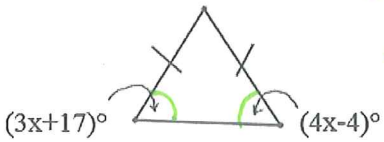
$25x=150$

$x=6$

Dakota + BW3 will have the shortest distance because op. the smallest ∠ is the smallest side.

$X =$ 6 $m<B =$ 45° $m<D =$ 118° $m<P =$ 23°

9. Find x.

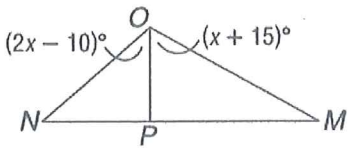


$4x-4=3x+17$ base ∠s of iso. △ are ≅

$x-4=17$

$x=21$

10. If PO is an angle bisector of <MON, find x.



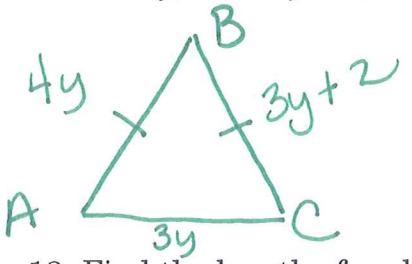
$\angle MOP \cong \angle NOP$ def of ∠ bisector.

$x+15=2x-10$

$15=x-10$

$25=x$

11. Find the measure of each side of isosceles triangle ABC with AB = BC if $AB = 4y, BC = 3y + 2, and\ AC = 3y.$



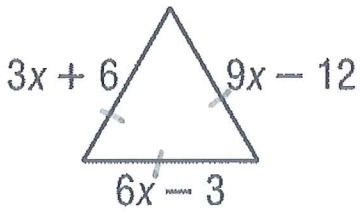
$AB \cong BC$ def of isos. $\triangle$

$4y = 3y + 2$

$y = 2$

$AB = 8$
$BC = 8$
$AC = 6$

12. Find the length of each side of the equilateral triangle below.



$6x - 3 = 3x + 6$

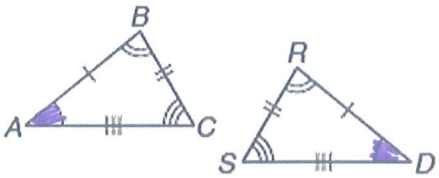
$3x - 3 = 6$

$3x = 9$

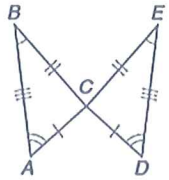
$x = 3$

15 units is the Length of each side.

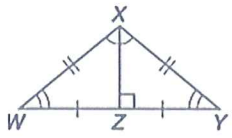
13. Identify the congruent triangles in the given figure



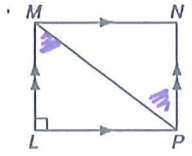
$\triangle ABC \cong \triangle DRS$



$\triangle ABC \cong \triangle DEC$

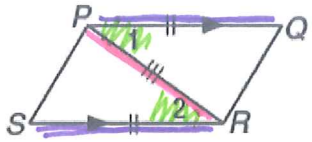


$\triangle XYZ \cong \triangle XWZ$



$\triangle MLP \cong \triangle PNM$

14.



$\triangle SRP \cong \triangle QPR$

a. Short cut congruence used SAS

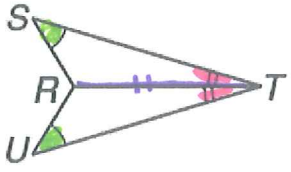
b. Name the 3 congruent corresponding parts:

S: $PR \cong PR$ reflexive

A: $\angle 1 \cong \angle 2$ // lines form $\cong$ alt. int. $\angle$s

S: $PQ \cong RS$ Given

15.



$\triangle STR \cong \triangle UTR$

a. Short cut congruence used AAS

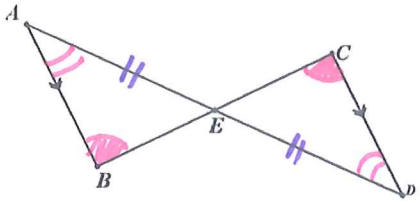
b. Name the 3 congruent corresponding parts:

A: $\angle S \cong \angle U$ given

A: $\angle STR \cong \angle UTR$ given

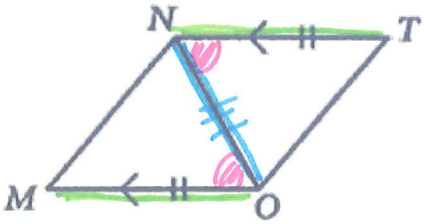
S: $RT \cong RT$ Reflexive

16. Write a two column proof.
Given: AB || CR and E is the midpoint of AD
Prove: CD ≅ AB



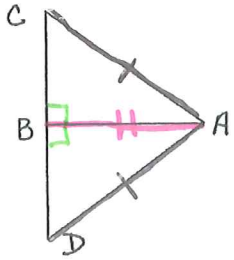
1. AB // CR E is the midpt of AD	1. given
2. AE ≅ DE	2. def of midpt
3. ∠C ≅ ∠B ∠A ≅ ∠D	3. // lines form ≅ alt int ∠s.
4. △DEC ≅ △AEB	4. AAS
5. CD ≅ AB	5. CPCTC

17. Write a two column proof.
Given: NT || MO and NT≅MO
Prove: <M ≅ <T



1. NT // MO NT ≅ MO	1. given
2. ∠TNO ≅ ∠MON	2. // lines form ≅ alt. int ∠s.
3. NO ≅ NO	3. Reflexive
4. △TNO ≅ △MON	4. SAS
5. ∠M ≅ ∠T	5. CPCTC

18. Write a two column proof.
Given: AB⊥ CD and AC ≅ AD
Prove: B is the midpoint of CD.



1. AB⊥CD AC ≅ AD	1. given
2. ∠ABC = 90°, ∠ABD = 90	2. def of ⊥
3. ∠ABC ≅ ∠ABD	3. substitution
4. AB ≅ AB	4. Reflexive
5. △ABC ≅ △ABD	5. HL
6. CB ≅ DB	6. CPCTC
7. B is the midpoint of CD	7. def of midpoint

Unit 4 Triangles Midterm Exam Re-Teach 2016 Name: _____

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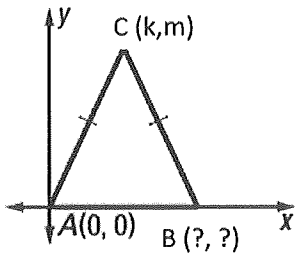

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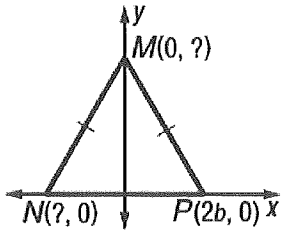

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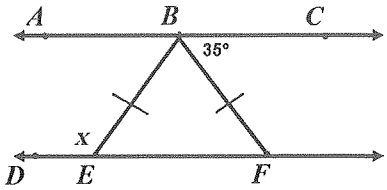

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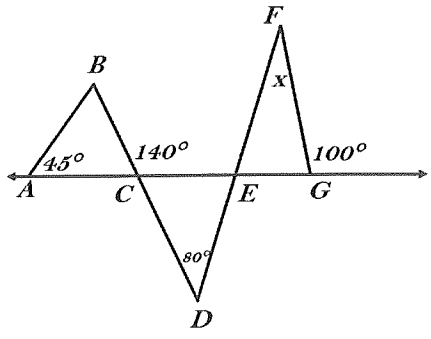

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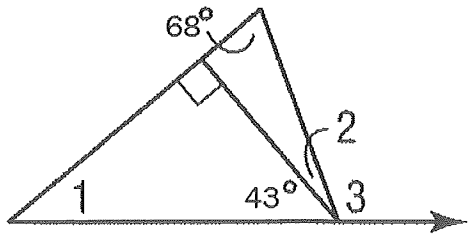

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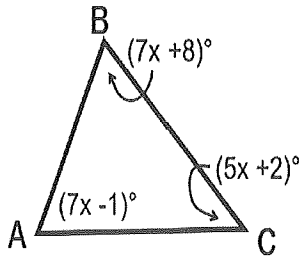

$x =$ _____ $m < A =$ _____ $m < B =$ _____ $m < C =$ _____

What two friends have the shortest distance between them? _____.
Why?

_____

What two friends have the longest distance between them? _____.
Why?

_____

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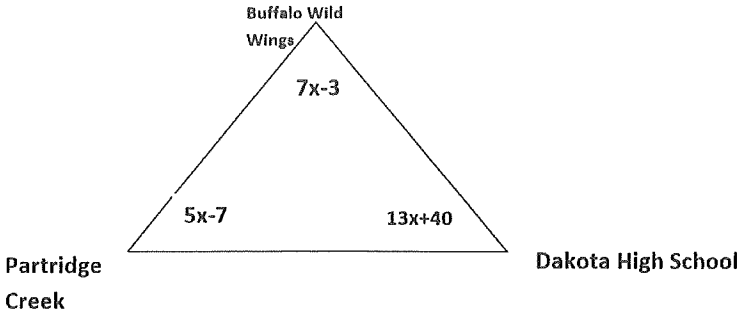
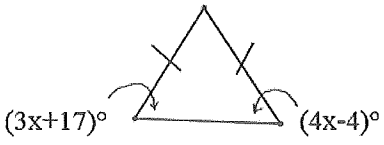


$X =$ ___ $m < B =$ _____ $m < D =$ _____ $m < P =$ _____

9. Find x.



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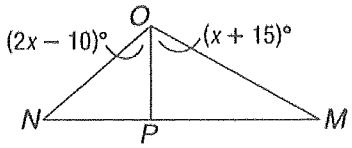

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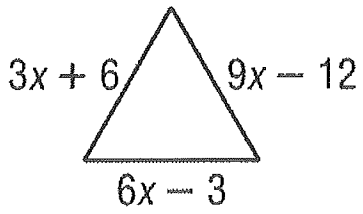

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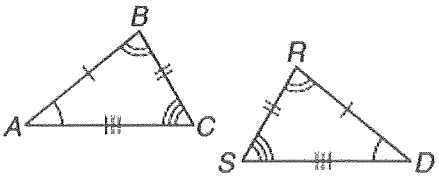
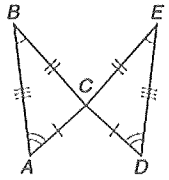
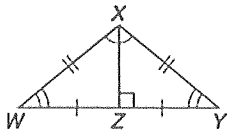


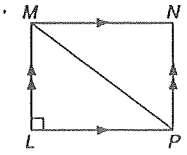
ΔABC≅_____



ΔABC≅_____

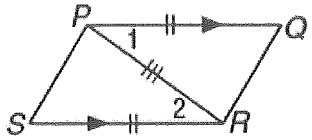


ΔXYZ≅_____



ΔMLP≅_____

14.

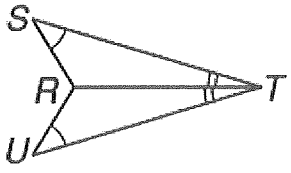


$\Delta\, SRP \cong$ _____

a. Short cut congruence used _____

b. Name the 3 congruent corresponding parts:

15.



$\Delta\, STR \cong$ _____

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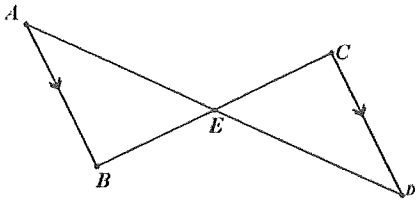
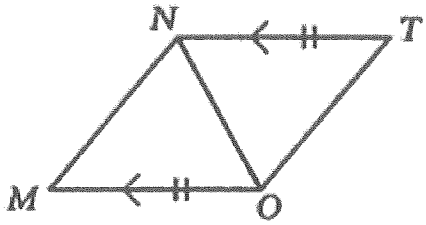
Given: AB | | CR and E is the midpoint of AD
Prove: CD $\cong$ AB



17. Write a two column proof.
Given: NT | | MO and NT$\cong$MO
Prove: <M $\cong$ <T



18. Write a two column proof.
Given: AB$\perp$ CD and AC $\cong$ AD
Prove: B is the midpoint of CD.