Geometry/Trig 2 Name: _____

Unit 3 Review Packet Date: _____

Section I - Name the ~~five~~ six ways to prove that parallel lines exist.

1. cons int ∠ converse

2. alt int ∠ converse

3. alt ext ∠ converse

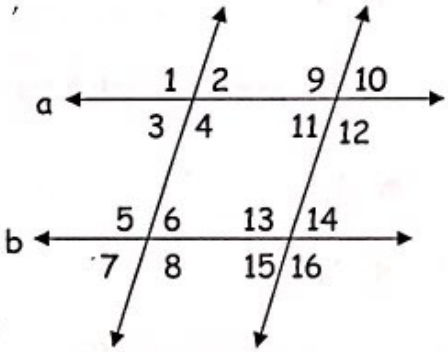
4. corr ∠ converse

5. Transitivity of Parallel lines

6. Perpendicular lines

Section II - Identify the pairs of angles. If the angles have no relationship, write none.

1. ∠7 & ∠11 None
2. ∠3 & ∠6 Alt int
3. ∠8 & ∠16 Corres
4. ∠2 & ∠7 Alt ext.
5. ∠3 & ∠5 Same side int
6. ∠1 & ∠16 none
7. ∠1 & ∠6 none
8. ∠1 & ∠4 vertical



Section III - Fill In

Vertical angles are ≅

If two parallel lines are cut by a transversal, then corresponding angles are ≅

If two parallel lines are cut by a transversal, then alternate interior angles are ≅

If two parallel lines are cut by a transversal, then alternate exterior angles are ≅

If two parallel lines are cut by a transversal, then same side interior angles are 180

If two parallel lines are cut by a transversal, then same side exterior angles are 180

Name the 6 ways to prove lines are parallel. _____

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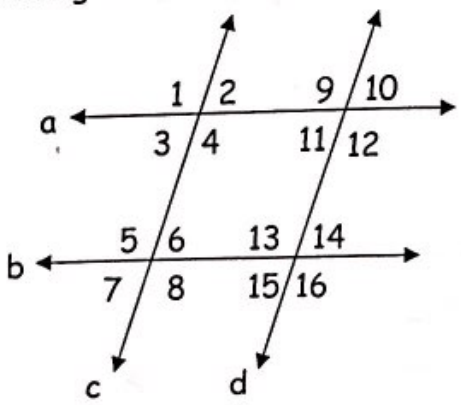
Section IV - Determine which lines, if any, are parallel based on the given information.



1.) m∠1 = m∠9 c // d

2.) m∠1 = m∠4 none

3.) m∠12 + m∠14 = 180 a // b

4.) m∠1 = m∠13 none

5.) m∠7 = m∠14 c // d

6.) m∠13 = m∠11 none (should be supp)

7.) m∠15 + m∠16 = 180 none

8.) m∠4 = m∠5 a // b

Section IV - Determine which lines, if any, are parallel based on the given information.

1. m∠1 = m∠4 a // b

2. m∠6 = m∠8 t // s

3. ∠1 and ∠11 are supplementary none

4. a ⊥ t and b ⊥ t a // b

5. m∠14 = m∠5 vert none

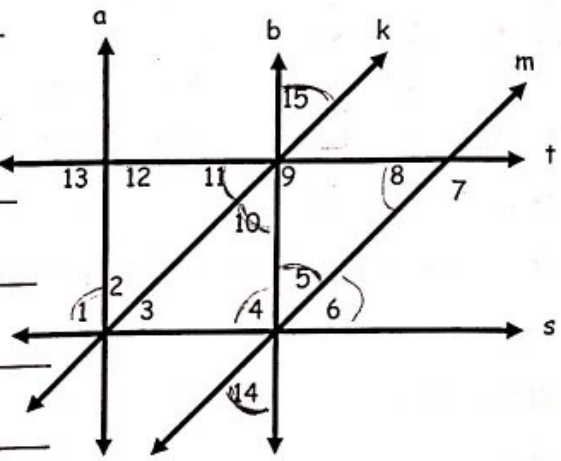
6. ∠6 and ∠7 are supplementary t // s

7. m∠14 = m∠15 k // m alt ext.

8. ∠7 and ∠8 are supplementary none

9. m∠5 = m∠10 k // m

10. m∠1 = m∠13 none



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Name: 12S + 480 − 50 2/3 S = 180

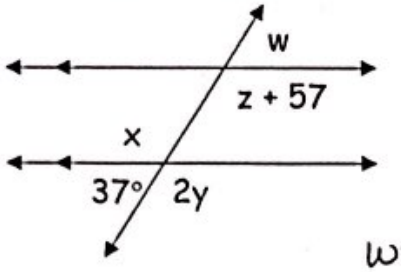
Date: − 38 2/3 S + 480 = 180

12S + 8t = 180
19S + 3t = 180

12S + 8(60 − 19/3 S) = 180

Section VI - Solve each Algebra Connection Problem.

1.



w + z + 57 = 180

x + 37 = 180

x = 143

143 = 2y

143 = z + 57

= z

w = 37

x = 143

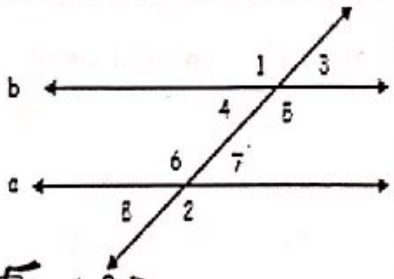
y = 71.5

z = 86

2.

$m\angle 1 = x^2 - 29x$;

$m\angle 7 = -x + 5$



$x^2 - 29x - x + 5 = 180$

$x^2 - 30x - 175 = 0$

$(x - 35)(x + 5)$

x = 35, −5

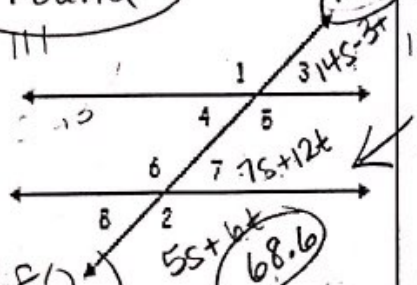
3.

round

$m\angle 3 = 14s - 3t$

$m\angle 7 = 9s + 12t$

$m\angle 2 = 5s + 6t$



110.9

14S − 3t

7S + 12t

55 + 6t

68.6

7(12S + 18t = 180)

12(7S − 15t = 0)

84S + 126t = 1260

−84S + 180t = 0

s = 8.8

t = 4.1

4.

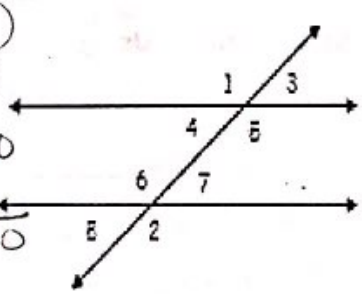
(12S + 18t = 180)

12(7S − 15t = 0)

84S + 126t = 1260

−84S + 180t = 0

306t = 1260



$m\angle 1 = x^2 + 5x - 1$

$m\angle 6 = 13$

14S + 18t = 180

$x^2 + 5x + 12 = 180$

$x^2 + 5x + 168$

$x^2 + 5x - 14 = 0$

$(x + 7)(x - 2)$

x = −7, 2

5.

306t = 1260

Solve the system.

Are the lines parallel, perpendicular or oblique?

−14S + 30t = 0

48t = 180

y = 3x - 1

2x - y = -3

2x − 3x + 1 = −3

−x = −4

x = 4

y = 11

6.

Solve the system.

Are the lines parallel, perpendicular or oblique?

3(2x − 5y = 4)

−6x + 15y = 12

$\frac{-5y}{-5} = \frac{-2x}{-5} + \frac{4}{-5}$

$\frac{15y}{15} = \frac{6x}{15} + \frac{12}{15}$

6x − 15y = 12

0 = 24

x = ∅

y =

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Section VII. Connections to Algebra

1) Write an equation of a line that goes through the point (-2, 7) and is parallel to $x - 2y = 6$.

$7 = \frac{1}{2}(-2) + b$

$-2y = -x + 6$

$y = \frac{x}{2} + 8$

2) Write an equation of a line that is perpendicular to $y = 5x - 4$

$m = -\frac{1}{5}$

$y = -\frac{1}{5}x - 7$

3) Solve the following system and state the types of lines (parallel, perpendicular or oblique) that are given. $y + 2x = 1$ and $y - \frac{1}{2}x = 4$.

$y = -2x + 1$ $\quad y = \frac{1}{2}x + 4$

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

$x = -1.2$

Section VIII. Using the Laws of Logic

1) If x is divisible by 4, then it is divisible by 2.

Converse: If x is divisible by 2, then x is div by 4 — T (F)

Inverse: If x is not div by 2, then x is not div by 4 — (T) F

Contrapositive: If x is not div by 4, then it is not ÷ by 2 — T (F)

Hypotheses: x is div by 4

Conclusion: it is div by 2

2) State whether you are using the law of syllogism or the law of detachment.
If you follow the snack rules in 4th period, then you have the priviledge of having a snack.

Caroline follows the rules.

Conclusion: Caroline can have snack

Justification: _____

Law of detachment

3) If the Eagles beat the Giants, then 3rd period will not stop talking about the game. If 3rd period doesn't stop talking about the game, then they will miss the review for the test.

Conclusion: If eagles beat the G, then 3rd period will miss the rev for the test

Law of Syllogism