3 Tri Geometry Name_____

Ch. 2 Retest Review Hour_____

Use the diagram to the right to complete the following:

1. List a pair of Corresponding Angles.
∠1&∠8 or ∠1 & ∠5 or ∠2 & ∠6 or ∠3 & ∠7 or

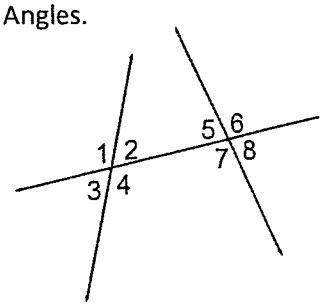
2. List a pair of Alternate Interior Angles.
∠2,∠7 or ∠4,∠5

3. List a pair of Alternate Exterior Angles.
∠1,∠8 or ∠3,∠6

4. List a pair of ~~Consecutive~~ Same Side Interior Angles.
∠2,∠5 or ∠4,∠7

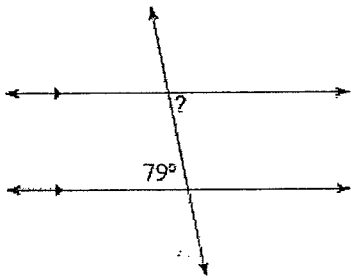
5. List a pair of Vertical Angles.
∠1,∠4 or ∠2,∠3 or ∠5,∠8 or ∠6,∠7

6. List 2 sets of Linear Pairs.
∠1,∠2 or ∠3,∠4 or ∠7,∠5 or ∠7,∠8



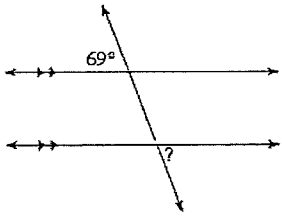
For #7-9, name the pair of angles and find the measure of the missing angle.

7.



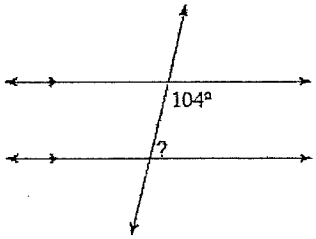
Name AIA, ?= 79°

8.



Name AEA, ?= 69°

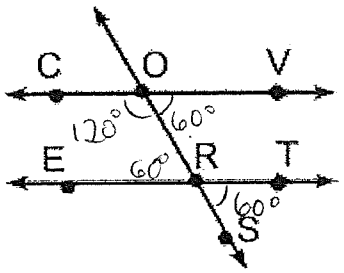
9.



Name SSIA, ?= 76°

104 + ? = 180
-104 -104
? = 76

10. In the figure, $m\angle SRT = 60°$. Which statement is FALSE?

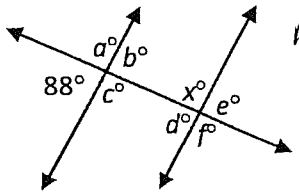


[A] m∠ROV= 60°
[B] m∠COR = 120°
[C] m∠ORE =60°
[D] ∠COR and ∠TRO are alternate interior angles.

All true.

Find the value of x. Explain/show your reasoning on each diagram. Be very detailed! (Use the names of the pairs of angles when you show why.)

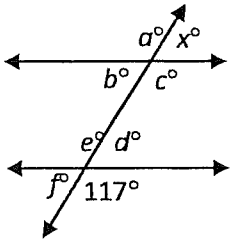
11.



X = 92°

a° and 88° are a linear pair so 180-88 = 92°. Since a° and x° are CA x° = 92°

12.

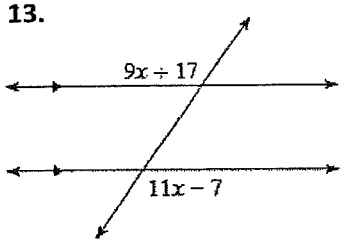


x° = 63°

117° = c° by CA and c° and x° are a LP. So 180-117° = 63°

For #13-16, state the name of the pair of angles, then find the value of x. Show your work. ***(2 points each)***

13.



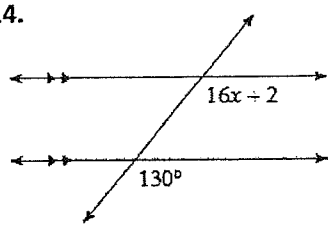
Name: AEA

(≅) or Supplementary

Find the value of x: $9x+17=11x-7$

$x=$

14.



Name: CA

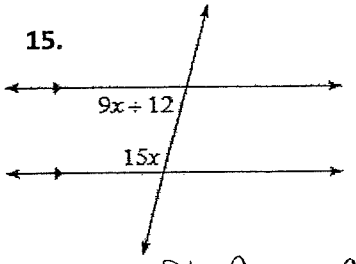
(≅) or Supplementary

Find the value of x:

$130=16x+2$

$x=$

15.



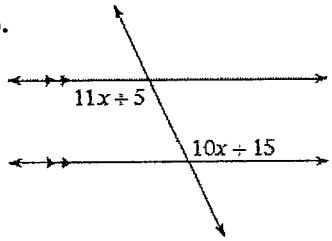
Name: SSIA $9x+12+15x=180$

≅ or Supplementary

Find the value of x:

$x=$

16.



$11x+10x+12+15=1$

$11x+5=10x+15$

Name: AIA

(≅) or Supplementary

Find the value of x:

$x=$

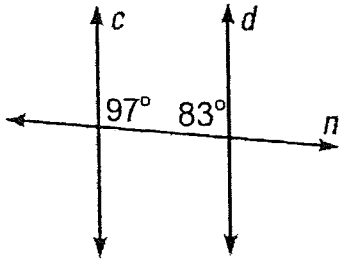
17. Based on the figure to the right, how do you know that lines *c* and *d* are parallel?

[A] Alternate Interior Angles are congruent

[B] Alternate Exterior Angles are congruent

[C] ~~Consecutive~~ Same Side Interior Angles are supplementary

[D] Corresponding Angles are congruent



$97°+83°=180°$ ✓ SSIA

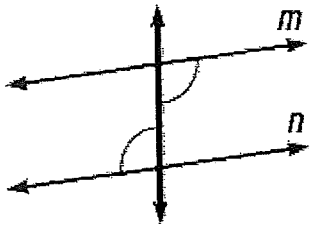
18. Based on the figure to the right, how do you know that lines *m* and *n* are parallel?

[A] Alternate Interior Angles are congruent

[B] Alternate Exterior Angles are congruent

[C] Consecutive Interior Angles are supplementary

[D] Corresponding Angles are congruent



19. Which would be sufficient to prove that j || k? Select all that apply.

[A] ∠3 ≅ ∠6

[B] ∠5 ≅ ∠1

[C] ∠8 and ∠7 are supplementary

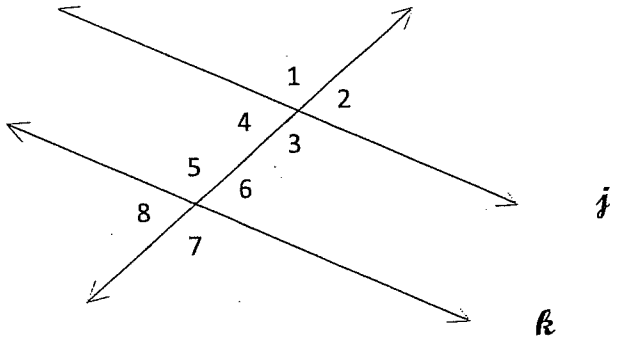
[D] ∠4 and ∠1 are supplementary

[E] ∠1 ≅ ∠3

[F] ∠6 ≅ ∠8

[G] ∠4 and ∠5 are supplementary

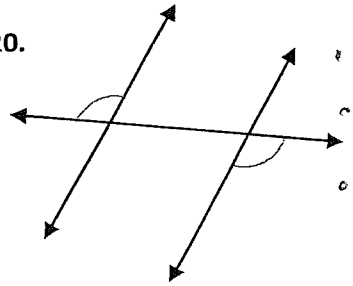
[H] ∠2 and ∠3 are supplementary



Are the 2 lines parallel? Explain how you know; be very detailed.

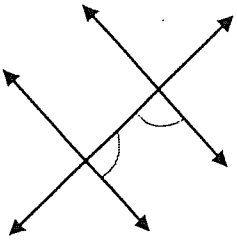
(Sample explanation structure: The lines are _____ because the _____ angles are _____.)

20.



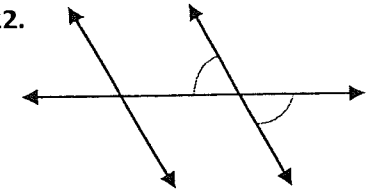
- parallel
- AEA
- congruent

21.



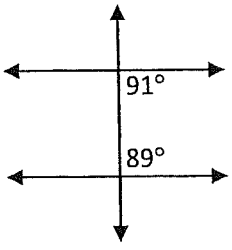
not parallel
SSIA
not ~~supp~~.
since they are ≅.

22.



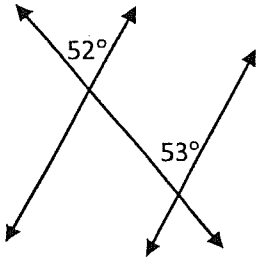
not parallel
VA
not enough info

23.



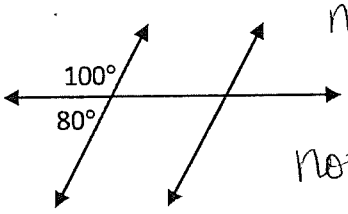
91° + 89° = 180
parallel
SSIA
~~supp~~.

24.



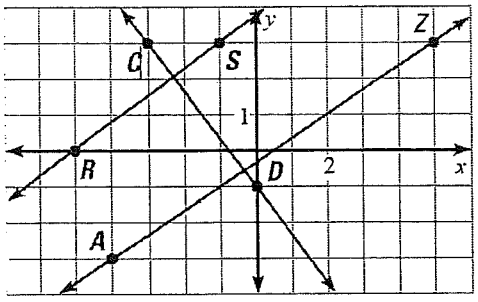
not parallel
CA
not ≅

25.



not parallel
LP
not enough info

26. Find the slope of each line. Which lines, if any, are parallel (||) or perpendicular (⊥).



Slopes:

$\overleftrightarrow{CD} = \frac{-4}{3}$

$\overleftrightarrow{RS} = \frac{3}{4}$

$\overleftrightarrow{AZ} = \frac{2}{3}$

Answer to the question:

$\overleftrightarrow{CD} \perp \overleftrightarrow{RS}$ because they're slopes are opposite reciprocals.

For the following questions, write the equation (y = mx + b) of the line given the following information.

27. Find the equation of a line that passes through P(-2, 4) and is <u>parallel</u> to $y = 6x - 7$

$||$ Slope $= 6$

$x = -2$

$y = 4$

$y = mx + b$

$4 = (6)(-2) + b$

$4 = -12 + b$

$+12 \quad +12$

$16 = b$

$y = 6x + 16$

28. Find the equation of a line that passes through P (-6, 5) and is <u>perpendicular</u> to $y = -2x + 4$

$\perp$ Slope $= \frac{1}{2}$

$x = -6$

$y = 5$

$y = mx + b$

$(5) = (\frac{1}{2})(-6) + b$

$5 = -3 + b$

$+3 \quad +3$

$8 = b$

$y = \frac{1}{2}x + 8$

29. Jake says that the line perpendicular to $y = \frac{1}{3}x + 9$ passing through the point (2, 4) is $y = -\frac{1}{3}x + 5$.

a) What is Danielle's error?

The slope $-\frac{1}{3}$ is not the opposite reciprocal. ~~the opposite reciprocal~~

and $(\frac{1}{3}) \cdot (-\frac{1}{3}) \neq -1$

b) Find the correct equation of the perpendicular line.

$\perp$ slope $= -3$

$x = 2$

$y = 4$

$4 = -3(2) + b$

$4 = -6 + b$

$+6 \quad +6$

$10 = b$

$y = -3x + 10$

30. Decide which lines below (if any) are parallel and which are perpendicular. <u>Explain your reasoning.</u> *(2 points)*

line *a*: $y = -6x + 2$

line *b*: $y = 6x - 7$

line *c*: $y = \frac{1}{6}x + 3$

line *d*: $y = \frac{3}{5}x - 7$

line *e*: $y = \frac{3}{5}x + 2$

Any Parallel Lines?

d and e because the slopes are the same, $\frac{3}{5}$

Any Perpendicular Lines?

a $\perp$ c because $-6 \cdot \frac{1}{6} = -1$

and they are opp. reciprocals.