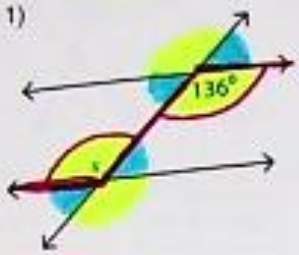
Part 5: Parallel Lines and Transversals [Corresponding Angles, Alternate Interior Angles, Alternate Exterior Angles]

Find the missing angle measurement. Identify the relationship of the angles: corresponding (C), alternate interior (I), alternate exterior (E), vertical (V), or supplementary (S) angles.

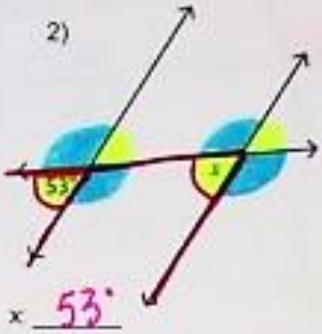
1)



x 136°

Relationship: I

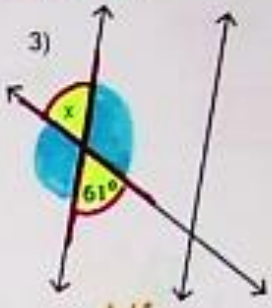
2)



x 53°

Relationship: C

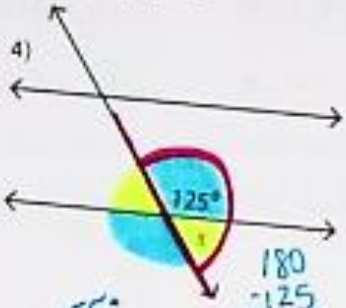
3)



x 61°

Relationship: V

4)

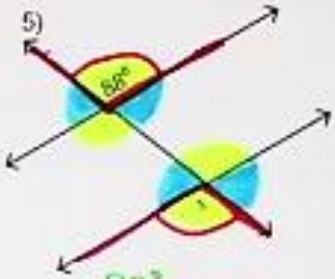


180
-125
55

x 55°

Relationship: S

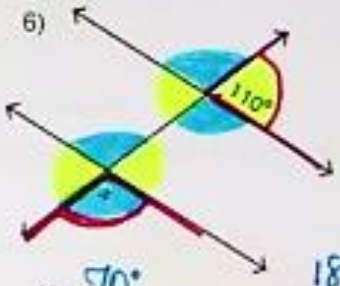
5)



x 88°

Relationship: E

6)



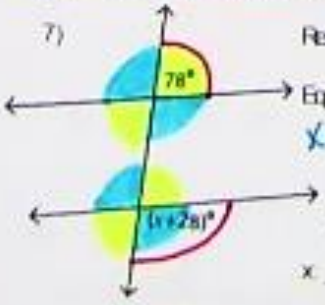
180
-110
70

x 70°

Relationship: S

Identify the relationship of the angles: corresponding (C), alternate interior (I), alternate exterior (E), vertical (V), or supplementary (S) angles. Write an equation to solve for x. Solve.

7)



Relationship: S

Equation: x+28+78=180

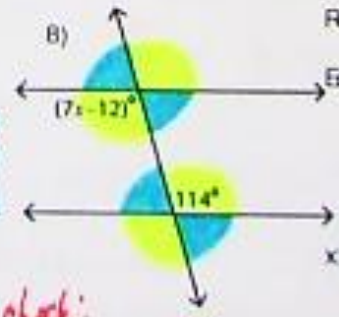
x+106=180

-106 -106

x 74

check: ?
(74)+28+78=180
102+78=180
180=180 ✓

8)



Relationship: I

Equation: 7x-12=114

+12 +12

7x=126

7 7

x=18

x 18

check: ?
7(18)-12=114
126-12=114
114=114 ✓

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Identify the relationship of the angles corresponding (C), alternate interior (I), alternate exterior (E), vertical (V), or supplementary (S) angles. Write an equation to solve for x. Solve.

9) Relationship: S

Equation $2x-7+67=180$

$2x+60=180$

$2x=120$

$x=60$

x = 60

10) Relationship: C

Equation $4x+2=106$

$\frac{4x}{4}=\frac{104}{4}$

$x=26$

x = 26

11) Identify the measures of the indicated angles.

$m\angle 2 = 97°$ $m\angle 6 = 83°$ Given: $t \parallel s$

$m\angle 3 =$ 97° $m\angle 5 =$ 97°

$m\angle 10 =$ 97° $m\angle 7 =$ 83°

$m\angle 9 =$ 83° $m\angle 16 =$ 97°

The following questions are multiple choice. Circle the letter next to the best answer.

12) In the drawing, what is the measure of angle y?

A. 40 B. 60 C. 80 (D) 100

13) In the diagram below, $\overline{PQ}$ and $\overline{RS}$ are parallel.

alt int ∠'s are ≅

$x+60=130$

-60

$x=70$

Based on the angle measures in the diagram, what is the value of x?

(A) 70 B. 60 C. 50 D. 40

14)

Note: All purple highlighted angles are ≅!

$\therefore 2x+16=x+14$

$x=-2$

Given: $a \parallel b$, $c \parallel d$

If $m\angle 1 = 2x + 16$ and $m\angle 2 = x + 14$, then what is the value of x?

A. −10 (B.) −2 C. 2 D. 10