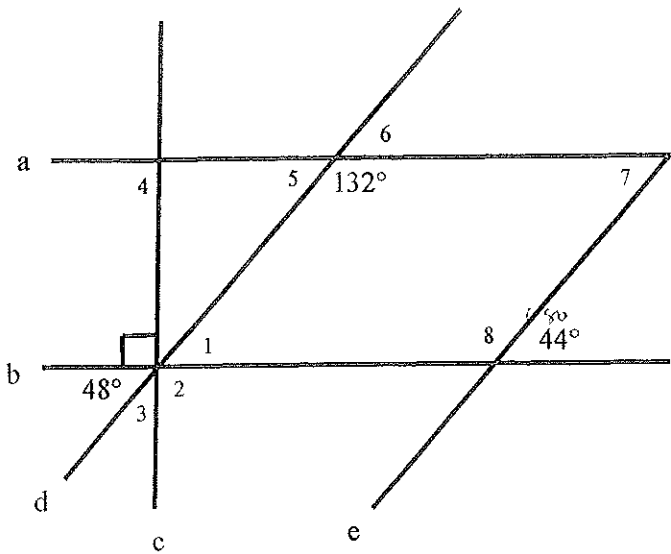


1 Find the measures of each of the numbered angles in the figure below.



1 = 48° VMT 2 = 90° VMT

3 = 42° comp. 4 = 90

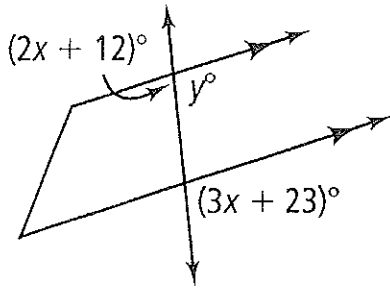
5 = 48° LP 6 = 48° VMT

7 = 44° AIA 8 = 136°

Is a || b? yes Is d || e? No

Find the value of the variables in each diagram. Show all work!

2.



$$2x + 12 + y = 180 \quad y = 3x + 23$$

$$2x + 12 + 3x + 23 = 180$$

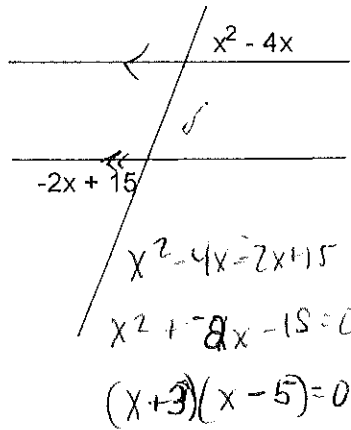
$$5x + 35 = 180$$

$$5x = 145$$

$$x = 29 \quad y = 110$$

2. x = 29 y = 110

3.



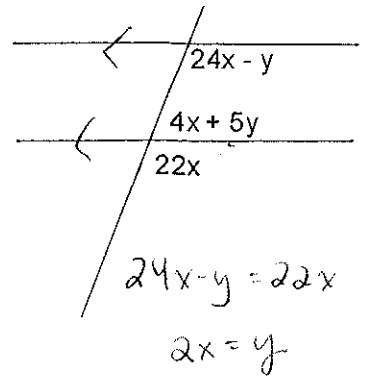
$$x^2 - 4x = -2x + 15$$

$$x^2 - 2x - 15 = 0$$

$$(x + 3)(x - 5) = 0$$

3. x = -3, 5

4.



$$24x - y = 22x$$

$$2x = y$$

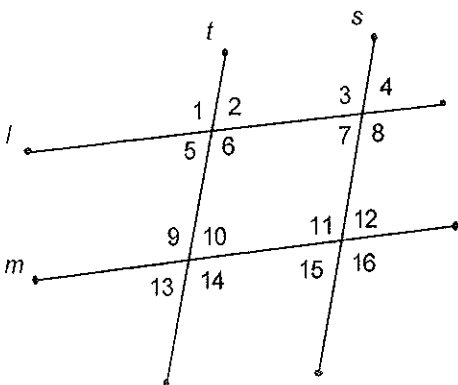
$$4x + 5y + 22x = 180$$

$$26x + 5y = 180$$

4. x = 5 y = 10

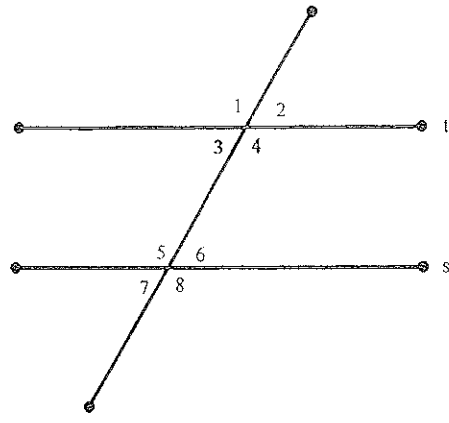
Classify each pair of angles as;

a) alternate interior b) alternate exterior c) same side interior d) corresponding or e) none of these x = 5



- 5) <1 & <9 d
- 6) <3 & <12 e
- 7) <4 & <15 b
- 8) <6 & <11 e
- 9) <8 & <14 e
- 10) <12 & <10 a
- 11) <7 & <12 a
- 12) <6 & <7 c
- 13) <13 & <4 e
- 14) <16 & <3 b
- 15) <5 & <4 b
- 16) <11 & <14 a

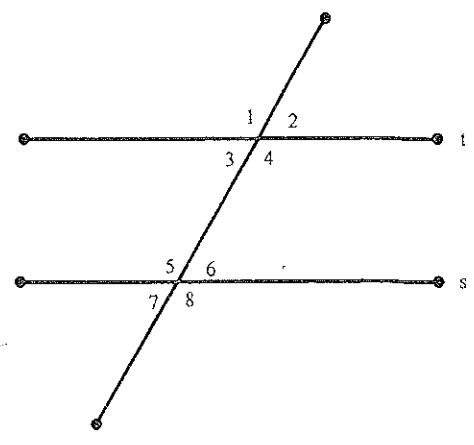
Write the 2 column proofs below;



17. Given: $t \parallel s$
 Prove: $m\angle 5 + m\angle 2 = 180^\circ$

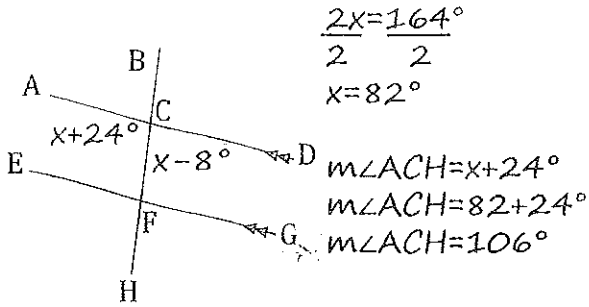
Statements	Reasons
1) $t \parallel s$	1) Given
2) $\angle 5 \cong \angle 4$	2) Alt. int. \angle Thm.
3) $\angle 2$ and $\angle 4$ are Supplem.	3) Lin. Pr. Post.
4) $m\angle 4 + m\angle 2 = 180$	4) Defn. Supplem.
5) $m\angle 5 = m\angle 4$	5) Defn. \cong
6) $m\angle 5 + m\angle 2 = 180$	6) Substitution

18. Given: $t \parallel s$; $m\angle 7 = 81^\circ$
 Prove: $m\angle 1 = 99^\circ$



S	R
1) $t \parallel s$	1) given
2) $\angle 1 \cong \angle 8$	2) alt. ext. \angle Thm
3) $m\angle 1 = m\angle 8$	3) defn. \cong
4) $\angle 7$ & $\angle 8$ are supple.	4) Lin. Pr. Post.
5) $m\angle 7 + m\angle 8 = 180$	5) Defn. supplem.
6) $m\angle 7 + m\angle 1 = 180$	6) Substitution
7) $m\angle 7 = 81$	7) given
8) $81 + m\angle 1 = 180$	8) substitution
9) $m\angle 1 = 99$	9) Subtraction

37. $m\angle ACH = X + 24^\circ$, $m\angle DCH = X - 8^\circ$. Find $m\angle ACH$.



$$\frac{2x = 164^\circ}{2 \quad 2}$$

$$x = 82^\circ$$

$$m\angle ACH = x + 24^\circ$$

$$m\angle ACH = 82 + 24^\circ$$

$$m\angle ACH = 106^\circ$$

Linear Pair

$$m\angle ACH + m\angle DCH = 180^\circ$$

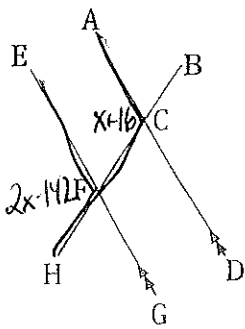
$$(x + 24^\circ) + (x - 8^\circ) = 180^\circ$$

$$x + 24^\circ + x - 8^\circ = 180$$

$$2x + 16^\circ = 180^\circ$$

$$-16^\circ \quad -16^\circ$$

39. $m\angle EFH = 2X - 142^\circ$, $m\angle ACH = X + 16^\circ$. Find $m\angle ACH$.



Corresp. \angle 's

$$m\angle EFH = m\angle ACH$$

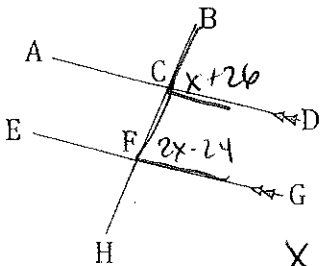
$$2x - 142 = x + 16$$

$$x = 158$$

$$m\angle ACH = 174^\circ$$

$$158 + 16 = 174^\circ$$

41. $m\angle BCD = X + 26^\circ$, $m\angle BFG = 2X - 24^\circ$. Find $m\angle BFG$.



Corresp.

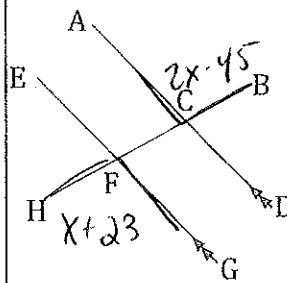
$$x + 26 = 2x - 24$$

$$50 = x$$

$$m\angle BFG = 2(50) - 24$$

$$= 76^\circ$$

38. $m\angle ACB = 2X - 45^\circ$, $m\angle HFG = X + 23^\circ$. Find $m\angle HFG$.



Alt. ext. \angle 's

$$m\angle ACB = m\angle HFG$$

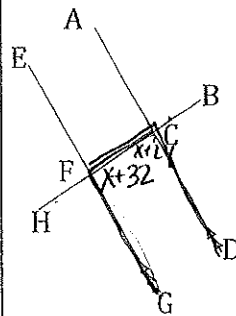
$$2x - 45 = x + 23$$

$$x = 68$$

$$m\angle HFG = 68 + 23$$

$$91^\circ$$

40. $m\angle GFB = x + 32^\circ$, $m\angle DCH = X + 24^\circ$. Find $m\angle DCH$.



Same Side Int.

$$x + 32 + x + 24 = 180$$

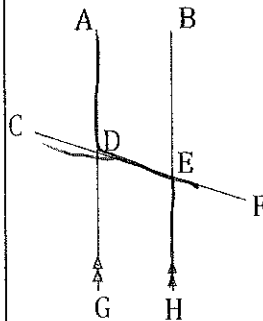
$$2x + 56 = 180$$

$$2x = 124$$

$$x = 62$$

$$m\angle DCH = 62 + 24 = 86^\circ$$

42. $m\angle ADF = 2X + 4^\circ$, $m\angle HEC = 4X - 14^\circ$. Find $m\angle HEC$.



Alt. Int. \angle 's

$$m\angle ADF = m\angle HEC$$

$$2x + 4 = 4x - 14$$

$$18 = 2x$$

$$x = 9$$

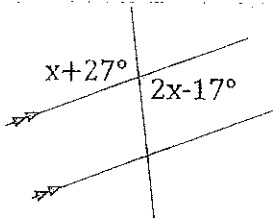
$$m\angle HEC = (4(9) - 14)$$

$$= 22^\circ$$

Bubble all the correct answers from above. Don't bubble incorrect answers.

- 76°
 110°
 91°
 94°
 106°
 97°
 22°
 165°
 86°
 92°

23.

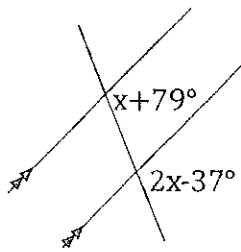


Vert. \angle s

$$x+27 = 2x-17$$

$$44 = x$$

25.

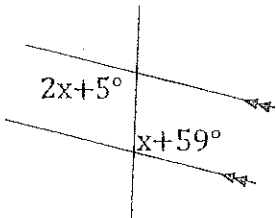


Corresp.

$$x+79 = 2x-37$$

$$116 = x$$

27.

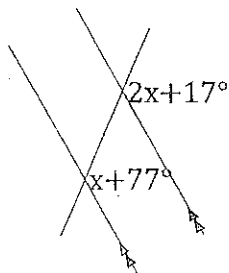


Alt. Int \angle s

$$2x+5 = x+59$$

$$x = 54$$

29.

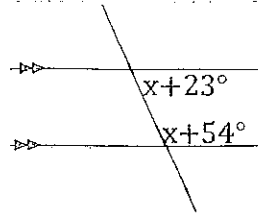


Corresp.

$$2x+17 = x+77$$

$$x = 60$$

24.



SSI

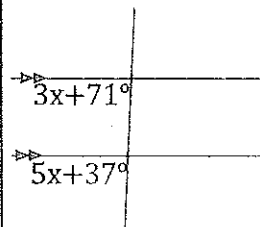
$$x+23 + x+54 = 180$$

$$2x+77 = 180$$

$$2x = 103$$

$$x = 51.5$$

26.



Corresp.

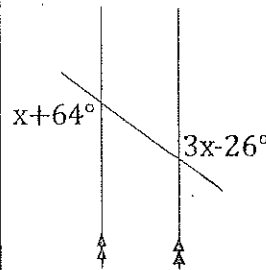
$$3x+71 = 5x+37$$

$$-37$$

$$34 = 2x$$

$$x = 17$$

28.



Alt. Ext \angle s

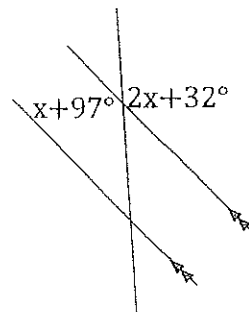
$$x+64 = 3x-26$$

$$-26$$

$$90 = 2x$$

$$x = 45$$

30.



Vert. \angle s

$$x+97 = 2x+32$$

$$-32$$

$$65 = x$$

Bubble all the correct answers from above. Don't bubble incorrect answers.

- 31°
 116°
 20°
 17°
 54°
 98°
 51.5°
 45°
 60°
 72.5°
 65°
 44°
 30.5°
 24°