

- If an L is  $x^\circ$ , what's comp?  $90-x$   
 supp?  $180-x$

$$L + \text{comp} = 90$$

$$x + \text{comp} = 90$$

$$\text{comp} = 90 - x$$

- Supp exceeds 3 times comp 30. Find supp.

$$180 - x = 3(90 - x) + 30$$

$$180 - x = 270 - 3x + 30$$

 $+3x$ 
 $+3x$ 

$$2x + 180 = 300$$

$$-180 \quad -180$$

$$2x = 120$$

$$\underline{2} \quad \underline{2}$$

$$x = 60 \rightarrow L$$

$$\text{supp} = 180 - 60 = 120^\circ$$

- ~~$3x$~~   ~~$2x$~~  Ratio: "X"

$$3:2 \Rightarrow 3x:2x$$

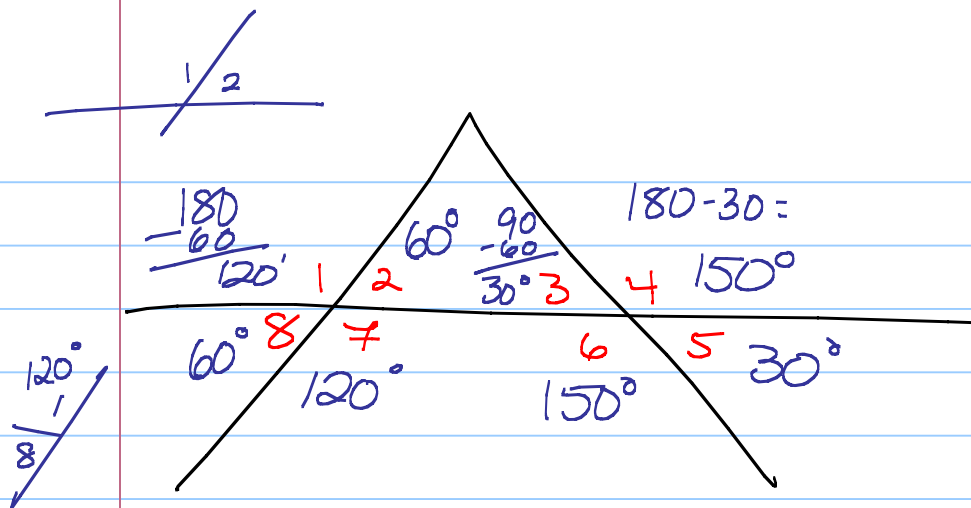
$$5x = 180$$

$$x = 36$$

$$3x = 3(30+6)$$

$$90 + 18 = 108^\circ$$

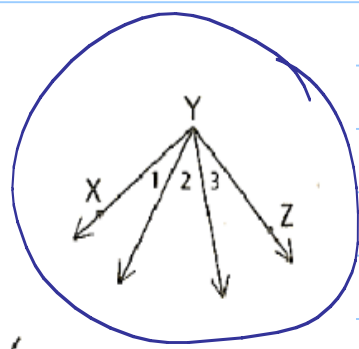
$$2x = 72^\circ$$



$\angle 2$  comp  $\angle 3$   
 $\angle 2 = 60^\circ$

Example Proof 1:

- Given:  $\angle 1 = 20^\circ$   
 $\angle 2 = 40^\circ$   
 $\angle 3 = 30^\circ$



Prove:  $\angle XYZ$  is a rt  $\angle$ .

- |                           |         |
|---------------------------|---------|
| 1 $\angle 1 = 20^\circ$   | 1 Given |
| 2 $\angle 2 = 40^\circ$   | 2 Given |
| 3 $\angle 3 = 30^\circ$   | 3 Given |
| 4 $\angle XYZ = 90^\circ$ | 4 Add   |

- |                                   |                                      |
|-----------------------------------|--------------------------------------|
| 5 $\angle XYZ$ is a rt $\angle$ . | 5 $90^\circ \Rightarrow$ rt $\angle$ |
|-----------------------------------|--------------------------------------|

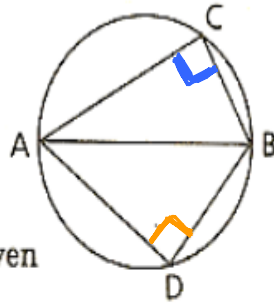
rt  $\angle$  is  $90^\circ$  (conv)

Example Proof 2:

Given:  $\angle ACB = 90^\circ$

$\overline{AD} \perp \overline{BD}$

Prove:  $\angle C \cong \angle D$



1  $\angle ACB = 90^\circ$

1 Given

2  $\overline{AD} \perp \overline{BD}$

2 Given

3  $\angle ADB$  rt  $\angle$

3  $\perp \Rightarrow$  rt  $\angle$  (2)

4  $\angle ACB$  is rt  $\angle$ .

4  $90^\circ \Rightarrow$  rt  $\angle$  (1)

5  $\angle C \cong \angle D$

5  $2$  rt  $\angle$ s  $\Rightarrow$   $\cong \angle$  (3+4)

Q.4: 12 15 16 , 18, 19

Q.5] Supp exceeds 3 times comp by 10. Find comp.

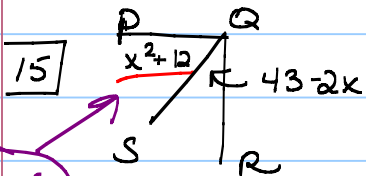
$$180 - x = 3(90 - x) + 10$$

$$180 - x = 270 - 3x + 10$$

$$2x = 100$$

$x = 50^\circ$  is meas of angle

$$\text{comp} = 90 - 50 = \boxed{40^\circ}$$



$PQ \perp QR \Rightarrow \angle PQR$  rt  $\angle \Rightarrow \angle PQR = 90^\circ$

$$x^2 - 2x + 55 = 90$$

$$x^2 - 2x - 35 = 0$$

$$(x - 7)(x + 5) = 0$$

If  $x - 7 = 0$  then  $x = 7$

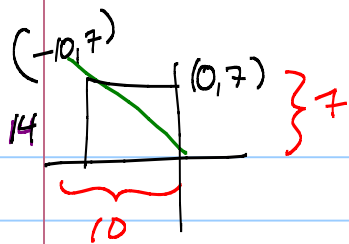
If  $x + 5 = 0$  then  $x = -5$

Mult. Prop. of Zero

Find  $m\angle PQS$

What mult to -35 but adds to -2?

$$m\angle PQS = x^2 + 12 \begin{cases} x = 7 \Rightarrow \angle PQS = \boxed{61^\circ} \\ x = -5 \Rightarrow \angle PQS = \boxed{37^\circ} \end{cases}$$



$$A_{\text{RECT}} = 7(10) = 70$$

$$A_{\Delta} = \frac{70}{2} = \boxed{35}$$

2.4 ans key online

Note tomorrow's quiz  
Write proof:

G:     

P:     



make sure you...

Statements	Reasons
1. <u>    </u>	1. Given
2. <u>    </u>	2. <u>    </u>
3. <u>    </u>	3. <u>    </u>

- If an angle is  $x^\circ$ , what is the measure of the complement? Of the supplement?

$$C = x$$

$$C = 90 - x$$

$$S = 180 - x$$

- The measure of the supplement of an angle exceeds three times the measure of the complement by 30. Find the measure of the supplement.

$$180 - x = 3(90 - x) + 30$$

$$180 - x = 270 - 3x + 30$$

$$+3x \qquad +3x$$

$$180 + 2x = 300$$

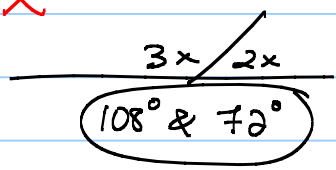
$$2x = 120$$

$$x = 60^\circ \text{ is the } \angle$$

then  
the suppl is  
180  
- 60  
120°

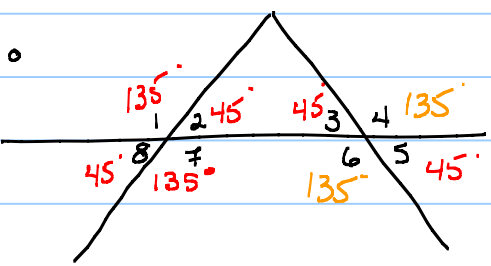
- The ratio of two supplementary angles is 3:2. Find the measure of each angle.

↘ "x"  
3x : 2x



$$5x = 180$$

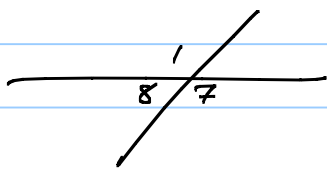
$$x = 36$$



Q:  $\angle 7 = 135^\circ$   
 $\angle 2$  comp  $\angle 3$

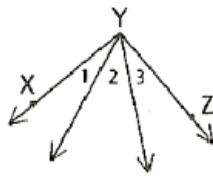
$$\angle 7 + \angle 8 = 180$$

$$180 - 135 = 45$$



Example Proof 1:

Given:  $\angle 1 = 20^\circ$   
 $\angle 2 = 40^\circ$   
 $\angle 3 = 30^\circ$



Prove:  $\angle XYZ$  is a rt  $\angle$ .

1 $\angle 1 = 20^\circ$	1 Given
2 $\angle 2 = 40^\circ$	2 Given
3 $\angle 3 = 30^\circ$	3 Given
4 $\angle XYZ = 90^\circ$	4 Add

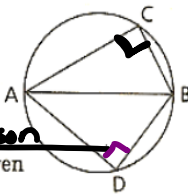
5  $\angle XYZ$  is a rt  $\angle$ .

5  $90^\circ \Rightarrow$  rt  $\angle$

wrong: If an  $\angle$  is rt, then it's  $90^\circ$  conv.

o Example Proof 2:

Given:  $\angle ACB = 90^\circ$   
 $\overline{AD} \perp \overline{BD}$



Prove:  $\angle C \cong \angle D$ .

Statement	Reason
1 $\angle ACB = 90^\circ$	1 Given
2 $\overline{AD} \perp \overline{BD}$	2 Given
3 $\angle ADB$ rt $\angle$	3 $\perp \Rightarrow$ rt $\angle$ (2)
4 $\angle ACB$ is rt $\angle$ .	4 $90^\circ \Rightarrow$ rt $\angle$ (1)
5 $\angle C \cong \angle D$	5 2 rt $\angle$ s $\Rightarrow$ $\cong$ $\angle$ s

Organization

- Write out proofs: there are 2 proofs that are 6 points each (12 points total). You do not need to copy the set up. You do need to draw the T-chart, label the columns, number the lines, and write the proof.

G: \_\_\_\_\_, \_\_\_\_\_  
 P: \_\_\_\_\_



Statements	Reasons
1. _____	1. Given
2. _____ _____	2. _____
3. _____	3. _____

2.4: If  $L$ s are supp to same  $L$   
Then they're  $\cong$

If  $L$ s are supp to  $\cong$   $L$ s  
Then they are  $\cong$ .

If  $L$ s are comp to same  $L$   
Then they're  $\cong$ .

If  $L$ s are comp to  $\cong$   $L$ s  
Then they are  $\cong$