

Station 1 - Provide a justification (definition, property, postulate, or theorem) for each statement.

1.) If  $BH \perp DC$ , then  $\angle DCH$  is a right angle.

2.)  $FC + CG = FG$ .

3.) If  $C$  is the midpoint of  $FG$ , then  $FC = CG$ .

4.)  $m\angle BCG + m\angle GCH = 180$ .

5.) If  $\angle DCH$  is a right angle, then  $m\angle DCH = 90$ .

6.)  $m\angle DCG + m\angle GCH = m\angle DCH$ .

7.) If  $\angle BCD$  is a right angle, then  $BH \perp DC$ .

8.) If  $C$  is the midpoint of  $FG$ , then  $FC = \frac{1}{2}FG$ .

9.) If  $\angle 3$  and  $\angle 1$  are complementary angles, then  $m\angle 3 + m\angle 1 = 90$ .

10.)  $\angle BCF \cong \angle GCH$

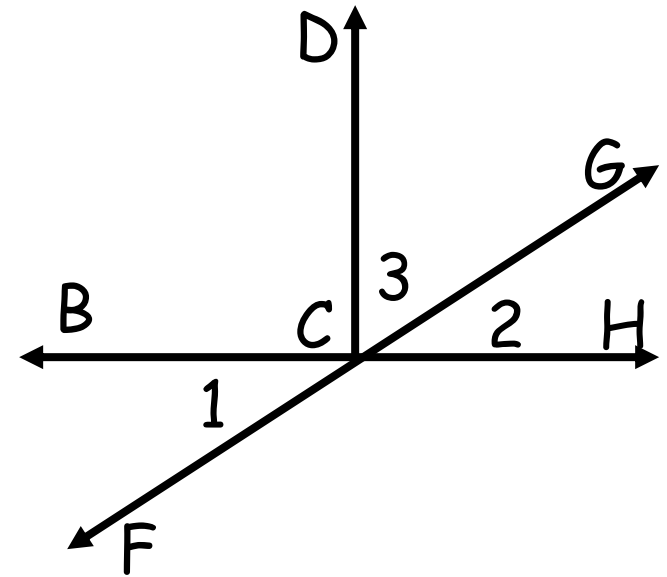
11.) If  $m\angle 1 = m\angle 2$  and  $m\angle 2 = m\angle 3$ , then  $m\angle 1 = m\angle 3$ .

12.) If  $m\angle BCF + m\angle FCH = m\angle FCH + m\angle HCG$ , then  $m\angle BCF = m\angle HCG$ .

13.) If  $CG$  bisects  $\angle DCH$ , then  $\angle DCG \cong \angle GCH$

14.) If  $m\angle DCG + m\angle FCH = 180$ , then  $\angle DCG$  and  $\angle FCH$  are supplementary angles.

15.) If  $CG$  bisects  $\angle DCH$ , then  $m\angle DCG = \frac{1}{2}m\angle DCH$ .



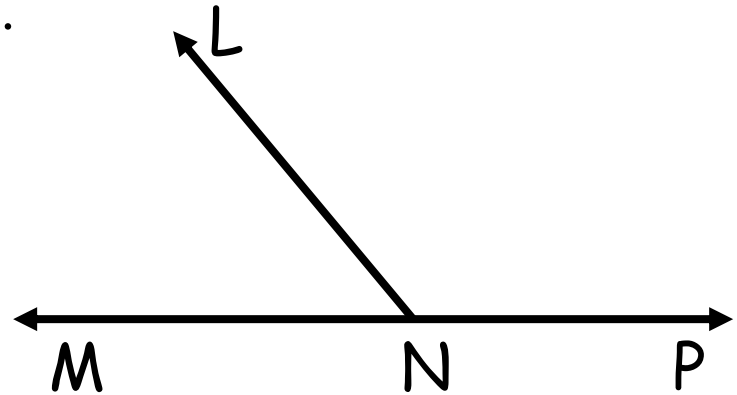
# Station 2 - Complete each algebra connection problem.

1.



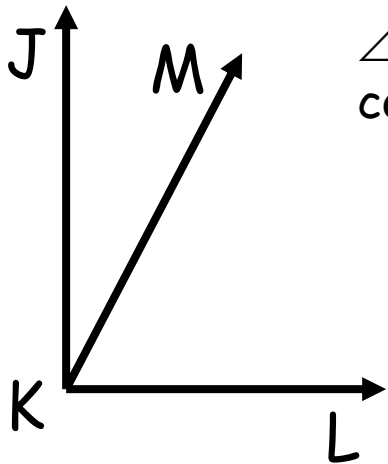
If  $DF = 2x - 1$ ,  $FG = 2x + 7$ , and  $DG = 6x - 8$ , find the value of  $x$ ,  $DF$ ,  $FG$ , and  $DG$ .

2.



If  $m\angle MNL = 14x + 2$  and  $m\angle LNP = 45x + 1$ , find the value of  $x$ ,  $m\angle MNL$ ,  $m\angle LNP$ , and  $m\angle MNP$ .

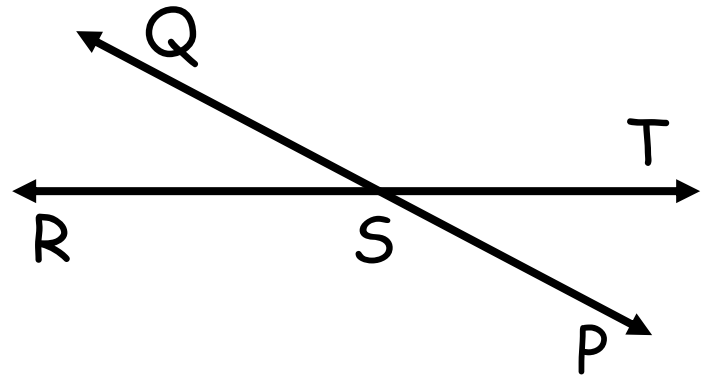
3.



$\angle JKM$  and  $\angle MKL$  are complementary angles.

If  $m\angle JKM = 2x$  and  $m\angle MKL = 6x + 10$ , find the value of  $x$ ,  $m\angle JKM$ ,  $m\angle MKL$  and  $m\angle JKL$ .

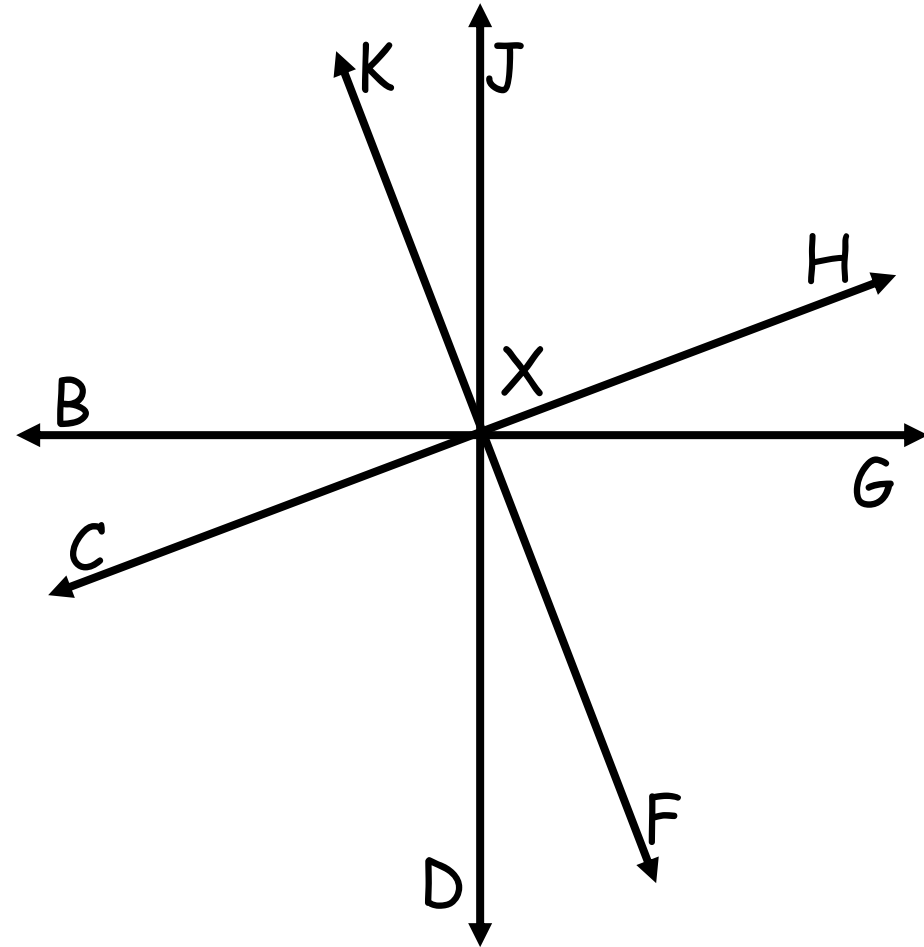
4.



If  $m\angle QSR = 7x - 5$  and  $m\angle TSP = 6x + 3$ , find the value of  $x$ ,  $m\angle QSR$ ,  $m\angle TSP$ ,  $m\angle QST$  and  $m\angle RSP$ .

Station 3 - Complete the diagram on your answer sheet; fill in all missing angle measures; find the measure of each indicated angle measure.

Given:  $KF \perp CH$ ;  $JD \perp BG$ ;  $m\angle BXK = 72$

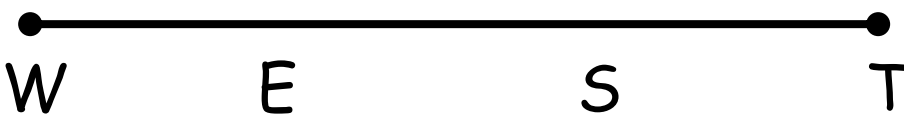


Find each angle measure:

- |                    |                    |
|--------------------|--------------------|
| 1.) $m\angle KXJ$  | 11.) $m\angle CXJ$ |
| 2.) $m\angle JXH$  | 12.) $m\angle JXF$ |
| 3.) $m\angle HXG$  | 13.) $m\angle GXC$ |
| 4.) $m\angle GXF$  | 14.) $m\angle CXH$ |
| 5.) $m\angle FXD$  | 15.) $m\angle FXB$ |
| 6.) $m\angle DXC$  | 16.) $m\angle KXD$ |
| 7.) $m\angle CXB$  | 17.) $m\angle DXH$ |
| 8.) $m\angle KXH$  | 18.) $m\angle CXF$ |
| 9.) $m\angle KXF$  | 19.) $m\angle CXH$ |
| 10.) $m\angle FXH$ | 20.) $m\angle BXJ$ |

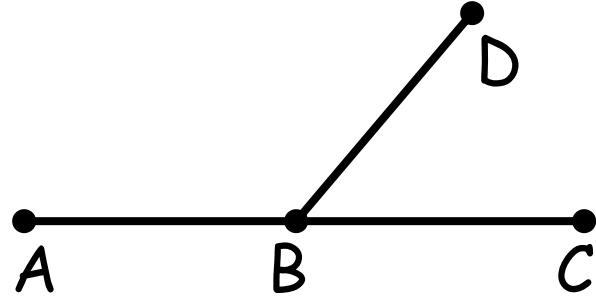
# Station 4 - Complete each proof.

1. Given:  $WE = ST$   
 Prove:  $WS = ET$



Statements	Reasons
1. _____	1. _____
2. $WE + \underline{\hspace{1cm}} = ST + \underline{\hspace{1cm}}$	2. Addition Property
3. $WE + ES = \underline{\hspace{1cm}}$ $ST + ES = \underline{\hspace{1cm}}$	3. _____
4. _____	4. _____

2. Given:  $AB = BD$ ;  $BC = BD$ .  
 Prove: B is the midpoint of AC.

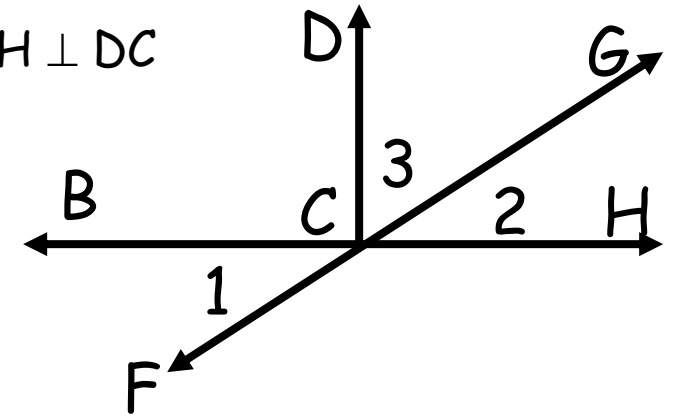


Statements	Reasons
1. _____	1. _____
2. _____	2. Substitution
3. _____	3. _____

# Station 5 - Complete each proof.

1. Given:  $4x + 3y = 2x + 1$ ;  $y = -2$   
 Prove:  $x = 3.5$

2. Given:  $\angle 1$  and  $\angle 3$  are complementary.  
 Prove:  $BH \perp DC$



Statements	Reasons
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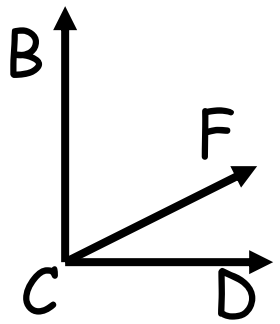
Statements	Reasons
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- |  |          |
|--|----------|
| 1. _____                                 | 1. _____ |
| 2. _____                                 | 2. _____ |
| 3. $m\angle 1 = m\angle 2$               | 3. _____ |
| 4. $m\angle 2 + m\angle 3 = 90$          | 4. _____ |
| 5. $m\angle 2 + m\angle 3 = m\angle DCH$ | 5. _____ |
| 6. _____                                 | 6. _____ |
| 7. $\angle DCH$ is a right angle         | 7. _____ |
| 8. _____                                 | 8. _____ |

# Station 6 - Complete each proof.

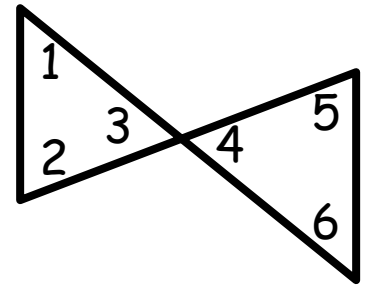
1. Given:  $BC \perp CD$

Prove:  $\angle BCF$  and  $\angle FCD$  are complementary.



2. Given:  $\angle 2 \cong \angle 3$ ;  $\angle 4 \cong \angle 5$ .

Prove:  $\angle 2 \cong \angle 5$ .



Statements	Reasons
1. _____	1. _____
2. $\angle BCD$ is a right angle	2. _____
3. _____	3. Definition of a right angle
4. _____	4. Angle Addition Postulate
5. _____	5. Substitution
6. _____	6. _____

Statements	Reasons
1. _____	1. Given
2. _____	2. _____
3. $\angle 2 \cong \angle 4$	3. _____
4. _____	4. Given.
5. _____	5. _____