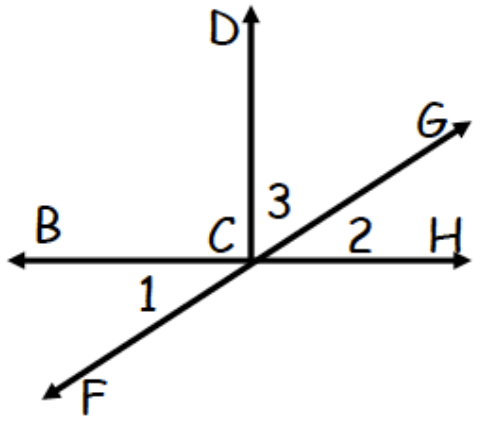
Station 1:

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



1. If $\overline{BH} \perp \overline{DC}$, then $\angle DCH$ is a right angle.

2. $FC + CG = FG$

3. If C is the midpoint of $\overline{FG}$, then $FC = CG$.

4. $m\angle BCG + m\angle GCH = 180°$

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

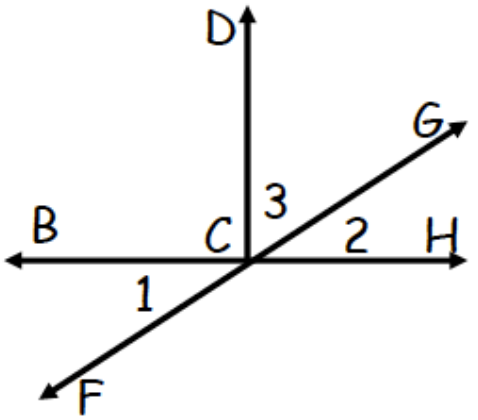
6. $m\angle DCG + m\angle GCH = m\angle DCH$

7. If $\angle BCD$ is a right angle, then $\overline{BH} \perp \overline{DC}$.

8. $\angle BCF \cong \angle GCH$

Station 2:

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



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

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

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

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

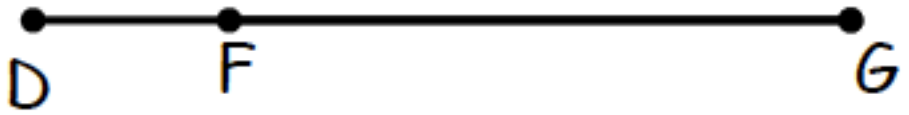
13. If $\overrightarrow{CG}$ bisects $\angle DCH$, then $\angle DCG \cong \angle GCH$.

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

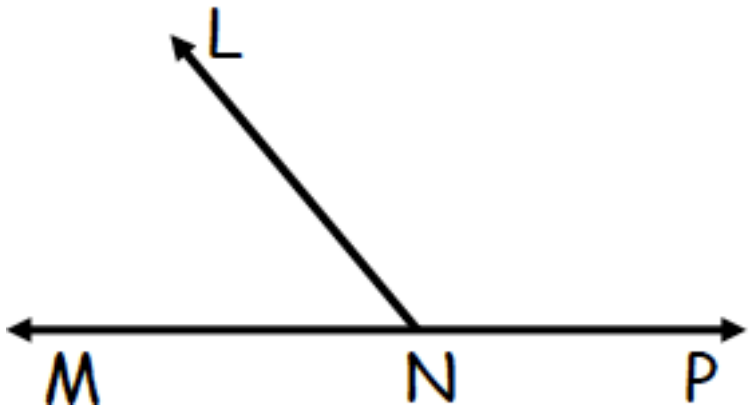
15. If $\overrightarrow{CG}$ bisects $\angle DCH$, then $m\angle DCG = \frac{1}{2}m\angle DCH$.

Station 3:

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

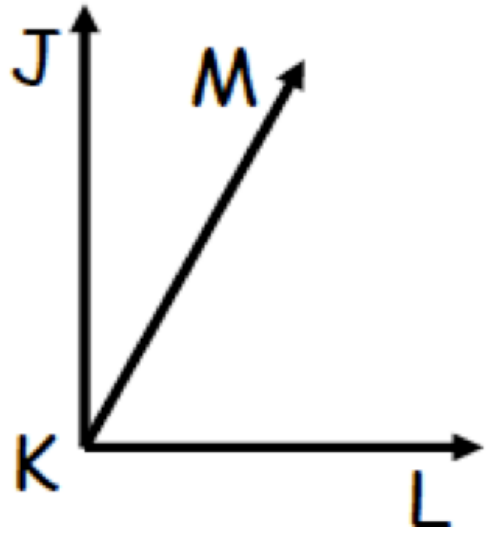


17. If $m\angle MNL = 14x + 2$ and $m\angle LNP = 45x + 1$, find the value of x, $m\angle MNL$, $m\angle LNP$ and $m\angle MNP$.

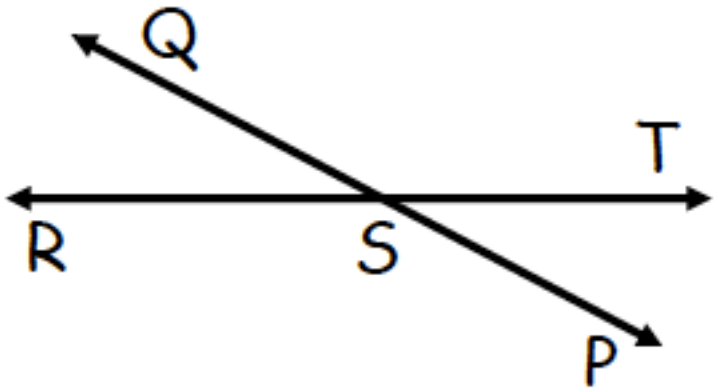


Station 4:

18. ∠JKM and ∠MKL are complementary angles. If m∠JKM = 2x and m∠MKL = 6x + 10, find the value of x, m∠JKM, m∠MKL and m∠JKL.

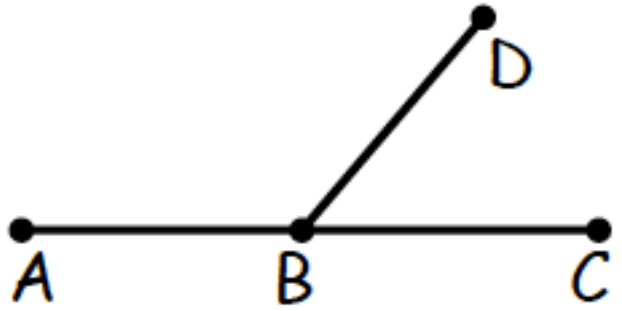


19. If m∠QSR = 7x – 5 and m∠TSP = 6x + 3, find the value of x, m∠QSR, m∠TSP, m∠QST and m∠RSP.



Station 5:

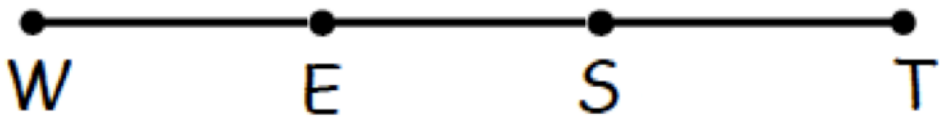
20. Given: AB = BD; BC = BD
    Prove: B is the midpoint of AC



Steps	Reasons
1.	
2.	substitution
3.	

Station 6:

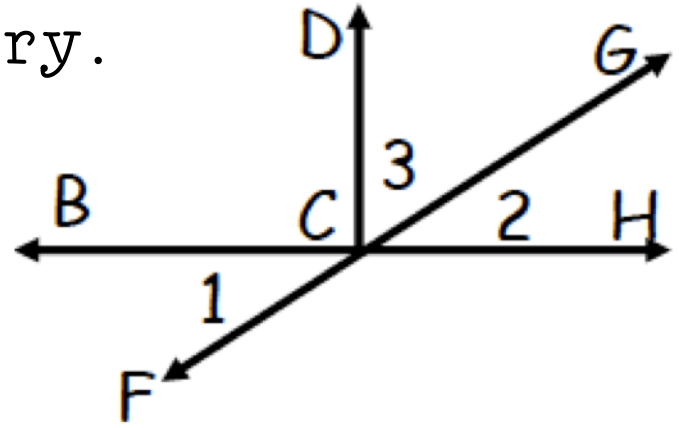
21. Given: WE = ST
    Prove: WS = ET



Steps	Reasons
1.	
2. WE + ____ = ST + ____	addition property
3. WE + ES = ____ ST + ES = ____	
4.	

Station 7:

22. Given: $\overline{1}$ and $\overline{3}$ are complementary.
Prove: $\overline{BH} \perp \overline{DC}$

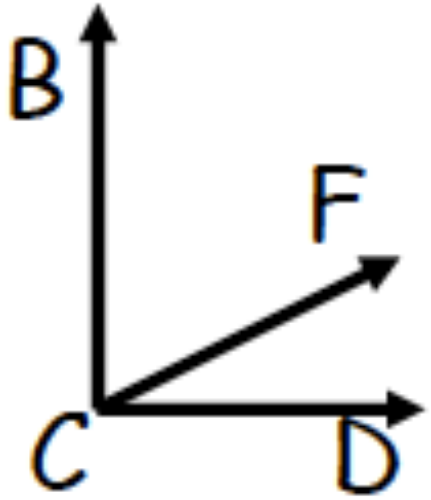


Steps	Reasons
1.	given
2.	def of complementary
3. m∠1 = m∠2	
4. m∠2 + m∠3 = 90°	
5. m∠2 + m∠3 = m∠DCH	
6.	substitution steps 4 & 5
7. ∠DCH is a right angle	
8.	

Station 8:

23. Given: $\overline{BC} \perp \overline{CD}$

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



Steps	Reasons
1.	
2. $\angle BCD$ is a right angle	
3. $m\angle BCD = 90°$	definition of a rt angle
4.	angle addition postulate
5.	substitution
6.	

Station 1:

1. definition of perpendicular
2. segment addition
3. definition of midpoint
4. linear pair
5. definition of right angle
6. angle addition
7. definition of right angle
8. vertical angles

Station 2:

9. subtraction
10. definition of complementary
11. substitution/transitive
12. definition of midpoint
13. definition of bisector
14. definition of supplementary
15. definition of angle bisector

Station 3:

16. $x = 7$, $DF = 13$, $FG = 21$, $DG = 34$

17. $x = 3$, $m\angle MNL = 44$, $m\angle LNP = 136$, $m\angle MNP = 180$

Station 4:

18. $x = 10$, $m\angle JKM = 20$, $m\angle MKL = 70$, $m\angle JKL = 90$

19. $x = 8$, $m\angle QSR = 51$, $m\angle TSP = 51$, $m\angle QST = 129$, $m\angle RSP = 129$

Station 5:

20. $AB = BD$; $BC = BD$	given
$AB = BC$	
B is the midpoint of AC	definition of midpoint

Station 6:

21. $WE = ST$	given
ES, ES	
WS, ET	segment addition
$WS = ET$	definition of congruent

Station 7:

22. $\angle 1$ and $\angle 3$ are complementary

$m\angle 1 + m\angle 3 = 90$	
	vertical angles
	substitution
	angle addition
$m\angle DCH = 90$	def of right angle
$\overline{BH} \perp \overline{DC}$	def of perpendicular

Station 8:

23. $\overline{BC} \perp \overline{CD}$	given
	def of perpendicular
$m\angle BCF + m\angle FCD = m\angle BCD$	
$m\angle BCF + m\angle FCD = 90$	
$\angle BCF$ & $\angle FCD$ are compl	def of complementary