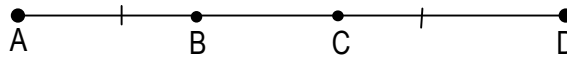


Name: \_\_\_\_\_

1. Given:  $x + 3 = 7 - x$   
 Prove:  $x = 2$

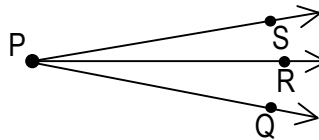
1. $x + 3 = 7 - x$	
2. $x = x$	
3. $2x + 3 = 7$	
4. $3 = 3$	
5. $2x = 4$	
6. $2 = 2$	
7. $x = 2$	

2. Given:  $AB = CD$   
 Prove:  $AC = BD$



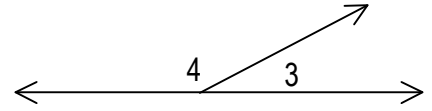
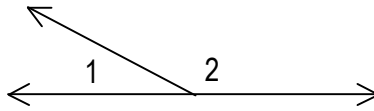
1. $AB = CD$	
2. $BC = BC$	
3. $AB + BC = CD + BC$	
4. $AB + BC = AC$	
5. $BC + CD = BD$	
6. $AC = BD$	

3. Given: PR Bisects  $\angle SPQ$   
 Prove:  $2(m\angle RPQ) = m\angle SPQ$



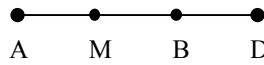
1. PR bisects $\angle SPQ$	
2. $\angle RPQ \cong \angle RPS$	
3. $m\angle RPQ = m\angle RPS$	
4. $m\angle RPQ + m\angle RPS = m\angle SPQ$	
5. $m\angle RPQ + m\angle RPQ = m\angle SPQ$	
6. $2(m\angle RPQ) = m\angle SPQ$	

4. Given:  $m\angle 1 + m\angle 2 = 180^\circ$   
 $m\angle 3 + m\angle 4 = 180^\circ$   
 $m\angle 1 = m\angle 3$   
 Prove:  $m\angle 2 = m\angle 4$



1. $m\angle 1 + m\angle 2 = 180^\circ$	
2. $m\angle 3 + m\angle 4 = 180^\circ$	
3. $m\angle 1 = m\angle 3$	
4. $m\angle 1 + m\angle 2 = m\angle 3 + m\angle 4$	
5. $m\angle 1 + m\angle 2 = m\angle 1 + m\angle 4$	
6. $m\angle 1 = m\angle 1$	
7. $m\angle 2 = m\angle 4$	

5. Given: M is the midpoint of AB  
 B is the midpoint of MD  
 Prove:  $MD = 2MB$



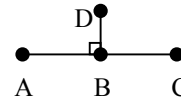
Statements

Reasons

- \_\_\_\_\_
- $AM = MB$ ;  $MB = BD$
- $MD = \underline{\hspace{1cm}} + \underline{\hspace{1cm}}$
- $MD = MB + MB$
- \_\_\_\_\_

- \_\_\_\_\_
- \_\_\_\_\_
- Segment Addition Postulate
- \_\_\_\_\_
- \_\_\_\_\_

6. Given: A, B, C are collinear;  $AB = BD$ ;  $BD = BC$   
 Prove: B is the midpoint of AC



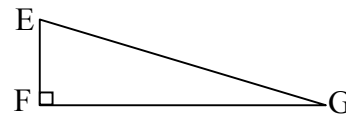
Statements

Reasons

- \_\_\_\_\_
- $AB = BC$
- \_\_\_\_\_

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

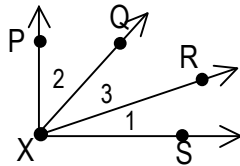
7. Given: EFG is a right triangle  
 Prove:  $\angle E$  and  $\angle G$  are complementary



- \_\_\_\_\_
- $m\angle F = 90^\circ$
- $m\angle E + m\angle F + m\angle G = 180^\circ$
- $m\angle E + 90^\circ + m\angle G = 180^\circ$
- $90^\circ = 90^\circ$
- $m\angle E + m\angle G = 90^\circ$
- \_\_\_\_\_

- \_\_\_\_\_
- \_\_\_\_\_
- Triangle Sum Theorem (angles in triangle = 180)
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- Definition of Complementary Angles

8. Given:  $m \angle 1 = m \angle 2$   
 Prove:  $m \angle PXR = m \angle SXQ$



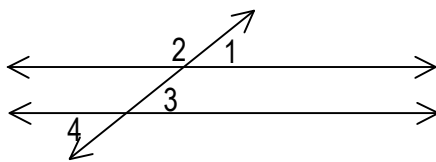
Statements

Reasons

1. \_\_\_\_\_
2.  $m \angle 3 = m \angle 3$
3.  $m \angle 1 + m \angle 3 = m \angle 2 + m \angle 3$
4.  $m \angle 2 + m \angle 3 = m \angle PXR$ ;  
 $m \angle 1 + m \angle 3 = m \angle SXQ$
5. \_\_\_\_\_

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

9. Given:  $\angle 1 \cong \angle 3$   
 Prove:  $\angle 1 \cong \angle 4$



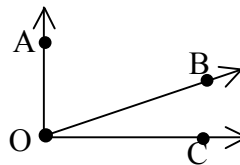
Statements

Reasons

1. \_\_\_\_\_
2.  $\angle 3 \cong \angle 4$
3. \_\_\_\_\_

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

10. Given:  $\vec{OA} \perp \vec{OC}$   
 Prove:  $\angle AOB$  and  $\angle BOC$  are complementary



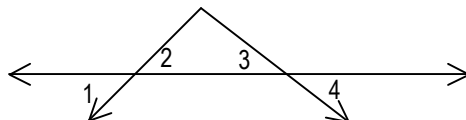
Statements

Reasons

1. \_\_\_\_\_
2.  $m \angle AOC = 90^\circ$
3.  $m \angle AOB + m \angle BOC = m \angle AOC$
4. \_\_\_\_\_
5. \_\_\_\_\_

1. \_\_\_\_\_
2. Definition of  $\perp$  lines
3. \_\_\_\_\_
4. Substitution Property
5. Definition of Complementary Angles

- 11.. Given:  $\angle 2 \cong \angle 3$   
 Prove:  $\angle 1 \cong \angle 4$



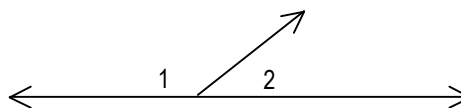
Statements

Reasons

1. \_\_\_\_\_
2.  $\angle 1 \cong \angle 2$  ;  $\angle 3 \cong \angle 4$
3. \_\_\_\_\_

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

12. Given:  $\angle 1$  and  $\angle 2$  are a linear pair;  $m \angle 1 = 130^\circ$   
 Prove:  $m \angle 2 = 50^\circ$



Statements

Reasons

1. \_\_\_\_\_
2.  $m \angle 1 + m \angle 2 = 180^\circ$
3.  $130^\circ + m \angle 2 = 180^\circ$
4. \_\_\_\_\_
5. \_\_\_\_\_

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

13. Given:  $2x+5 = 20-3x$   
 Prove:  $x = 3$

Statements

Reasons

1. \_\_\_\_\_
2.  $3x = 3x$
3.  $5x + 5 = 20$
4.  $-5 = -5$
5.  $5x = 15$
6.  $5 = 5$
7. \_\_\_\_\_

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_

**Write a complete proof for # 14**

14. Given:  $5(x-1) = 4x + 13$   
 Prove:  $x = 18$

Name the property/definition that each statement illustrates

15. If  $m \angle 6 = m \angle 7$ , then  $m \angle 7 = m \angle 6$  \_\_\_\_\_

16. If  $JK = KL$  and  $KL = 12$ , then  $JK = 12$  \_\_\_\_\_

17.  $m \angle W = m \angle W$  \_\_\_\_\_

18. If  $AB = CD$  and  $CD = EF$ , then  $AB = EF$  \_\_\_\_\_

19. If  $a = b$ , then  $a + j = b + j$  \_\_\_\_\_

20. If  $x = y$ , then  $\frac{x}{w} = \frac{y}{w}$  \_\_\_\_\_

21.  $a + b = b + a$  \_\_\_\_\_

22. If  $a + 5 = 40$ , then  $a = 35$  \_\_\_\_\_

23.  $6(x+4) = 6x + 24$  \_\_\_\_\_

24. If  $\angle A + \angle B = 100^\circ$  and  $m \angle B = 60$ , then  $m \angle A + 60^\circ = 100^\circ$  \_\_\_\_\_

25.  $m \angle A + m \angle B = 90^\circ$  so  $\angle A$  and  $\angle B$  are complementary \_\_\_\_\_

26.  $m \angle A = 90^\circ$  so  $\angle A$  is a right angle \_\_\_\_\_

27.  $\angle A$  and  $\angle B$  are supplementary so  $\angle A + \angle B = 180^\circ$  \_\_\_\_\_

28. If  $x + y = 13$  and  $x = 6$ , then  $y = 7$  \_\_\_\_\_

29. if  $c = d$ , then  $c - e = d - e$  \_\_\_\_\_

30. if  $x = y$ , then  $2x = 2y$  \_\_\_\_\_