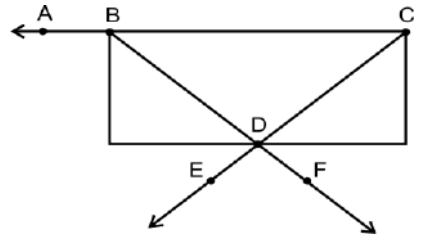# REVIEW: Unit 1 Quiz reasoning and proof

Use the figure to answer each question. Be sure to use appropriate symbols.

1. Name a line.   **2.** Name a segment.

3. Name a ray.   **4.** Name an angle.

State the property that justifies each statement.

5. If a + 10 = 20, then a = 10

6. If -3(x + 9) = 4, then -3x - 27 = 4.

7. If $\frac{x}{9} = -5$, then $x = -45$.

8. If the m∠1 = 36 and m∠2 = 36, then m∠1 = m∠2.

9. If 4x - 5 = x + 12, then 4x = x + 17

10. $\overline{MN} \cong \overline{OP}$ and $\overline{OP} \cong \overline{QR}$, then $\overline{MN} \cong \overline{QR}$

11. If ⅓BC = ⅓DE, then BC = DE

12. If 7(x - 3) = 35, then 35 = 7(x - 3).

Write an equation that can be used to find the requested measure using the points provided and identify which postulate you used. Then find the measure using the numerical values provided.

13. Find PS, if PQ = 2, QR = 5, RS = 2.5.

14. Find m∠ = UVZ, if m∠6 = 22, m∠7 = 35, and m∠8 = 51.
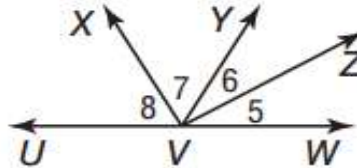
Fill in the missing statements and justifications.

15.

Given: c + d = f
          f = k
          c = d

Prove: k = 2c
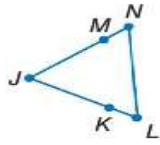
	STATEMENT	JUSTIFICATION
1	c + d = f	Given
2		
3	c = d	Given
4		Substitution (1, 3)
5	2c = f	
6	2c = k	
7		Symmetric Prop. Of Eq.

16.

Given: $\frac{2a-4}{3} = 8$.

Prove: a = 14

Statements	Reasons
1. _____	1. Given
2. $3\left(\frac{2a-4}{3}\right) = 3(8)$	2. _____
3. _____	3. Substitution Property (=)
4. 2a = 28	4. _____
5. _____	5. Division Property (=)

17. Given: $\overline{LK} \cong \overline{NM}, \overline{KJ} \cong \overline{MJ}$
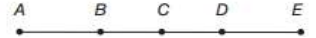
Prove: $\overline{LJ} \cong \overline{NJ}$

Proof:

Statements	Reasons
a. $\overline{LK} \cong \overline{NM}, \overline{KJ} \cong \overline{MJ}$	a. ?
b. ?	b. Def. of congruent segments
c. $LK + KJ = NM + MJ$	c. ?
d. ?	d. Segment Addition Postulate
e. $LJ = NJ$	e. ?
f. $\overline{LJ} \cong \overline{NJ}$	f. ?

18. Given: C is the midpoint of $\overline{BD}$ and $\overline{AE}$.

Prove: $AB = DE$

Statement	Reason
1. C is the midpoint of $\overline{BD}$ and $\overline{AE}$.	1. Given
2. $BC = CD$ and ___	2. ___
3. $AC = AB + BC,$ $CE = CD + DE$	3. ___
4. $AB = AC - BC$	4. ___
5. ___	5. Substitution Property
6. $DE = CE - CD$	6. ___
7. ___	7. ___

Write a two-column proof.

19. Given: ½x - 7 = 11

Prove: x = 36

Statements	Reasons

20. Given: 9(x + 2) = -4x + 5

Prove: x = -1

Statements	Reasons