19.

Statements	Reasons
1. $\overline{PR} \parallel \overline{VO}; \overline{RO} \parallel \overline{PV}$	1. Given
2. $PROV$ is a $\square$.	2. Def. of $\square$
3. $\overline{PR} \cong \overline{RO}$	3. Given
4. $PROV$ is a rhombus.	4. If 2 consec. sides of a $\square$ are $\cong$, then the $\square$ is a rhombus.
5. $\overline{RE} \cong \overline{EV}$	5. The diags. of a $\square$ bis. each other.
6. $\overline{EO} \cong \overline{EO}$	6. Refl. Prop.
7. $\overline{RO} \cong \overline{VO}$	7. Def. of rhombus
8. $\triangle ROE \cong \triangle VOE$	8. SSS Post.
9. $\overline{OE} \perp \overline{RV}$	9. The diags. of a rhombus are $\perp$.
10. $\angle VEO$ is a rt. $\angle$.	10. Def. of $\perp$ lines
11. $\triangle VEO$ is a rt. $\triangle$.	11. Def. of rt. $\triangle$
12. $\angle 1$ and $\angle VOE$ are comp.	12. The acute $\angle\!\!\!\angle$ of a rt. $\triangle$ are comp.
13. $m\angle 1 + m\angle VOE = 90$	13. Def. of comp. $\angle\!\!\!\angle$
14. $\angle 2 \cong \angle VOE$ or $m\angle 2 = m\angle VOE$	14. Corr. parts of $\cong$ $\triangle\!\!\!\triangle$ are $\cong$.
15. $m\angle 1 + m\angle 2 = 90$	15. Substitution Prop.
16. $\angle 1$ and $\angle 2$ are comp.	16. Def. of comp. $\angle\!\!\!\angle$

Pages 200–201 • CUMULATIVE REVIEW: CHAPTERS 1–5

A   **1.** one   **2. a.** yes; skew lines   **b.** no

    3. If you enjoy winter weather, then you are a member of the skiing club.

    4. -1 **5.** Trans. Prop.

    6. 180; The sum of the meas. of the $\angle\!\!\!\angle$ of a $\triangle$ is 180.   **7.** 180; $\angle$ Add. Post.

    8. 5; The meas. of an ext. $\angle$ of a $\triangle$ equals the sum of the meas. of the 2 remote int. $\angle\!\!\!\angle$.

    9. $\angle 1$; If 2 $\parallel$ lines are cut by a trans., then corr. $\angle\!\!\!\angle$ are $\cong$.

   10. $\overline{EB}$; If 2 $\angle\!\!\!\angle$ of a $\triangle$ are $\cong$, then the sides opp. those $\angle\!\!\!\angle$ are $\cong$.

   11. bisects; $\perp$ **12. a.** A and B **b.** $\overrightarrow{SR}$ and $\overrightarrow{ST}$

   13. a. $\triangle RTA$ **b.** $\overline{DB}$ **c.** $m\angle E$ **14.** $\dfrac{38(180)}{40} = 171$ **15.** 150, 150

B **16.** $2x + 7 = 4x - 1; 2x = 8; x = 4; SU = 2(4) + 7 = 15; UN = 4(4) - 1 = 15;$

     $SN = 3(4) + 4 = 16$

   17. $MN = \dfrac{1}{2}[(2r + s) + (4r - 3s)] = \dfrac{1}{2}(6r - 2s) = 3r - s$

   18. median   **19.** bisector   **20.** isos.

   21. $m\angle DAC + 2m\angle ADC = 180, 36 + 2m\angle ADC = 180, 2m\angle ADC = 144,$

     $m\angle ADC = 72; m\angle ADF = \dfrac{1}{2}(72) = 36$

24. In $\triangle VOZ$, $m\angle V = 180 - (90 + 30) = 60$, so $m\angle 1 = 180 - (90 + 60) = 30$; $\overline{OY} \cong \overline{YZ}$, so $m\angle 4 = m\angle Z = 30$; $m\angle 1 + m\angle 2 + m\angle 3 + m\angle 4 = 30 + m\angle 2 + m\angle 3 + 30 = 90$, so $m\angle 2 + m\angle 3 = 30$, and since $\overrightarrow{OX}$ bis. $\angle VOZ$, $m\angle 2 = m\angle 3 = 15$.

25. $m\angle 1 = m\angle 4 = k$; $m\angle 2 = m\angle 3 = 45 - k$

26. $\square$; If both pairs of opp. sides of a quad. are $\cong$, then the quad. is a $\square$.

27. $\angle NOM$, $\angle LMO$, $\angle NMO$; Each diag. of a rhombus bisects 2 $\angle$s of the rhombus.

28. midpt., $\overline{MN}$; A line that contains the midpt. of one side of a $\triangle$ and is $\parallel$ to another side passes through the midpt. of the third side.

29. PQ, ON; The median of a trap. has a length equal to the average of the base lengths.

30.

Statements	Reasons
1. $WP = ZP$; $PY = PX$	1. Given
2. $WP + PY = ZP + PX$	2. Add. Prop. of $=$
3. $WY = WP + PY$; $XZ = ZP + PX$	3. Seg. Add. Post.
4. $WY = XZ$ or $\overline{WY} \cong \overline{XZ}$	4. Substitution Prop.
5. $\angle PXY \cong \angle PYX$	5. Isos. $\triangle$ Thm.
6. $\overline{XY} \cong \overline{XY}$	6. Refl. Prop.
7. $\triangle WXY \cong \triangle ZYX$	7. SAS Post.
8. $\angle WXY \cong \angle ZYX$	8. Corr. parts of $\cong$ $\triangle$s are $\cong$.

31.

Statements	Reasons
1. $\overline{AD} \cong \overline{BC}$; $\overline{AD} \parallel \overline{BC}$	1. Given
2. $ABCD$ is a $\square$.	2. If one pair of opp. sides of a quad. are both $\cong$ and $\parallel$, then the quad. is a $\square$.
3. $\overline{DF} \cong \overline{BF}$	3. Diags. of a $\square$ bis. each other.
4. $\angle DFG \cong \angle BFE$	4. Vert. $\angle$s are $\cong$.
5. $\overline{DC} \parallel \overline{AB}$	5. Def. of $\square$
6. $\angle CDB \cong \angle ABD$	6. If 2 $\parallel$ lines are cut by a trans., then alt. int. $\angle$s are $\cong$.
7. $\triangle DFG \cong \triangle BFE$	7. ASA Post.
8. $\overline{EF} \cong \overline{FG}$	8. Corr. parts of $\cong$ $\triangle$s are $\cong$.