

## Solutions to Geometry (Jurgensen) Cumulative Review Questions

### Chapters 1-3

Test 13 1. never 2. sometimes 3. never  
 4. never 5. always 6. sometimes 7. never  
 8. always 9. always 10. sometimes 11. always  
 12. never 13. sometimes 14. always  
 15. always 16. sometimes 17. never 18. never  
 19. always 20. never 21. false 22. true  
 23. true 24. true 25. true 26. 5 27.  $\overline{SE}$   
 28. 1.5 29. a. 3 b. 40 30. a. a number is not  
 negative b. it is positive c. If a number is  
 positive, then it is not negative. 31. a. Add. Prop.  
 of = b. Substitution Prop. 32.  $x = 18, y = 80$   
 33. 45 34. 20 35. 135 36. 70 37. no  
 38. yes 39. yes 40.  $x = 45, y = 65$  41. 149  
 42. 18 43. 161, 483

44. Statements	Reasons
1. $\overline{RU} \parallel \overline{ST}; \overline{RS} \parallel \overline{UT}$	1. Given
2. $\angle 1 \cong \angle 3; \angle 2 \cong \angle 4$	2. If lines $\parallel$ , alt. int. $\angle \cong$ .
3. $m\angle 1 + m\angle 2 = m\angle 3 + m\angle 4$	3. Add. Prop. of =
4. $m\angle STU = m\angle 1 + m\angle 2$ $m\angle SRU = m\angle 3 + m\angle 4$	4. $\angle$ Add. Post.
5. $m\angle STU = m\angle SRU$ , or $\angle STU \cong \angle SRU$	5. Substitution Prop.
45. Statements	Reasons
1. $\triangle ABC$ and $\triangle DEC$ are rt. $\triangle$ ; $\angle 1 \cong \angle 4$	1. Given
2. $\angle 2$ and $\angle 1$ are comp. $\angle$ ; $\angle 3$ and $\angle 4$ are comp. $\angle$ .	2. The acute $\angle$ of a rt. $\triangle$ are comp.
3. $\angle 2 \cong \angle 3$	3. Comps. of $\cong \angle$ are $\cong$ .
4. $\angle 3 \cong \angle 5$	4. Vert. $\angle$ are $\cong$ .
5. $\angle 2 \cong \angle 5$	5. Trans. Prop.

### Chapters 4-5

Test 21 1. sometimes 2. always 3. always  
 4. sometimes 5. always 6. always 7. always  
 8. always 9. always 10. sometimes 11. always  
 12. always 13. 48 14. 10 15. 13 16. 7  
 17. 20 18. 6 19. HL or AAS 20. SSS or SAS  
 21. AAS 22. SAS or ASA 23. AAS or ASA  
 24. none 25. none 26. 83 27. 3 28. 7  
 29. 100 30. rhombus 31. 4 32. 1 33. 37  
 34. 22 35. 10 36. If both pairs of opp. sides of  
 quad. are  $\cong$ , then the quad. is a  $\square$ . 37. If the  
 diags. of a quad. bis. each other, then the quad. is  
 a  $\square$ . 38. If one pair of opp. sides of a quad. are  
 both  $\cong$  and  $\parallel$ , then the quad. is a  $\square$ . 39. 1. Given  
 2. Def. of  $\perp$  lines; def. of rt.  $\angle$  3. Def. of  $\cong \angle$   
 4.  $\overline{OP} \cong \overline{NP}$  5. Isos.  $\triangle$  Thm. 6.  $\overline{ON} \cong \overline{ON}$   
 7.  $\triangle MON$ ; ASA 8.  $\overline{KO} \cong \overline{MN}$ ; Corr. parts of  $\cong \triangle$   
 are  $\cong$ .

40. Statements	Reasons
1. $P, Q, R$ , and $S$ are midpts.	1. Given
2. $\overline{QR} \parallel \overline{AC}; \overline{PS} \parallel \overline{AC}$	2. The seg. that joins the midpts. of 2 sides of a $\triangle$ is $\parallel$ to the third side.
3. $\overline{QR} \parallel \overline{PS}$	3. Two lines $\parallel$ to a third line are $\parallel$ to each other.
4. $\overline{PQ} \parallel \overline{DB}; \overline{SR} \parallel \overline{DB}$	4. Same as 2
5. $\overline{PQ} \parallel \overline{SR}$	5. Same as 3
6. $PQRS$ is a $\square$ .	6. Def. of $\square$

### Chapters 6-7

Test 29 1. always 2. always 3. sometimes  
 4. always 5. always 6. sometimes 7. never  
 8. always 9. never 10. never 11. a.  $3:25t$   
 b.  $3:10$  12.  $\frac{v+w}{w}$  13.  $18y$  14. 12.5 15. 8  
 16. 11 17.  $>$  18.  $>$  19.  $<$  20.  $>$  21.  $<$   
 22. a.  $m\angle 1 < m\angle 2$  b. SSS Ineq. Thm.  
 23. a.  $AE > DE$  b. SAS Ineq. Thm.  
 24.  $5 < j < 29$  25. 135 26. Assume temp. that  
 $\triangle ABC$  is a rt.  $\triangle$ . Then  $\overline{AD}$  is a median to the hyp. of  
 $\triangle ABC$ . Since the midpt. of the hyp. of rt.  $\triangle$  is  
 equidist. from all three vertices,  $DA = DC$  and by  
 the Isos.  $\triangle$  Thm.,  $m\angle DAC = m\angle DCA$ . This  
 contradicts the given info. that  $m\angle DAC <$   
 $m\angle DCA$ . Therefore the temp. assumption that  
 $\triangle ABC$  is a rt.  $\triangle$  must be false. It follows that  
 $\triangle ABC$  is not a rt.  $\triangle$ . 27. 2 28. 6 29. 7 30. 3  
 31. 8 32. 12.5 33. SAS  $\sim$  34.  $U$  35. 15  
 36. 12 37.  $2:3$

38. Statements	Reasons
1. Rectangle $RSTU$	1. Given
2. $\angle S$ is a rt. $\angle$ .	2. Def. of rect.
3. $\overline{MN} \perp \overline{RT}$	3. Given
4. $\angle MNR$ is a rt. $\angle$ .	4. Def. of $\perp$ lines
5. $\angle S \cong \angle MNR$	5. Def. of rt. $\angle$ ; def. of $\cong \angle$
6. $\angle MRN \cong \angle MRN$	6. Refl. Prop.
7. $\triangle RST \sim \triangle RNM$	7. AA $\sim$
8. $\frac{RS}{RN} = \frac{RT}{RM}$	8. Corr. sides of $\sim \triangle$ are in prop.
9. $RS \cdot RM = RN \cdot RT$	9. Means-ext. prop.