

Chapter 7


Written Exercises, Pages 243–244

1. 5:3 3. 1:5 5. 3:16 7. 2 to 1 9. $\frac{1}{3}$ 11. $\frac{17}{1}$ 13. 12:6:5 15. 1:9 17. 3:4
 19. 8:5 21. $\frac{3}{4b}$ 23. $\frac{3}{a}$ 25. 132, 48 27. 37.5, 52.5 29. 72, 90, 90, 144, 162, 162 31. 50,
 70, 110, 130; 2 s-s. int. \triangle are supp. 33. a. 104 b. 0.310 35. 52.5

Written Exercises, Pages 247–248

1. 6 3. 21 5. $\frac{4}{7}$ 7. $\frac{y+3}{3}$ 9. $2\frac{2}{5}$ 11. $\frac{14}{15}$ 13. -3 15. 2 17. 11 19. 3
 21. 21; 12; 28 23. 8; 24; 20 25. 8; 4; 15 27. 27; 36; 12 29. By the means-ext. prop., $\frac{a+b}{b} =$
 $\frac{c+d}{d}$ is equiv. to $ad + bd = bc + bd$, or $ad = bc$. 33. 20 35. $\frac{1}{2}$ 37. 4 or $-\frac{9}{5}$ 39. $x = 16$,
 $y = 4$ 43. 3:2

Written Exercises, Pages 250–252

1. always 3. sometimes 5. always 7. sometimes 9. always 11. never 13. sometimes
 15. 4:5 17. 135 19. 12 21. $4k$ 23. Prop. 2 25. $x = 8, y = 18, z = 12$ 27. $x = 6\frac{1}{4}$,
 $y = 6\frac{2}{3}, z = 5$ 29.  31. $RS = RS$, but $ZR > XR$, so $\frac{RS}{RS} = 1 \neq \frac{ZR}{XR}$.
 33. $C'(9, 1), D'(8, 2)$, or $C'(5, 1), D'(6, 2)$ 35. 90; sq. 37. a. $-3 + 3\sqrt{5}$ b. $\frac{1 + \sqrt{5}}{2}; 1.62$

Self-Test 1, Page 252

1. 3:5 2. 3 to 10 3. $\frac{2a}{3b}$ 4. 6 5. 10 6. 3 7. No 8. Yes 9. Yes 10. 45, 60, 75
 11. 2:3 12. 12 13. 15 14. 12 15. 100, 100, 100, 120, 140, 160

Written Exercises, Pages 257–260

1. \sim 3. \sim 5. No concl. 7. \sim 9. No concl. 11. $x = 6, y = 4$ 13. $x = 9, y = 5$
 15. 27 m 17. 0.55 cm 19. $x = 2, y = 6$ 21. a. 1. $\overline{EF} \parallel \overline{RS}$ (Given) 2. $\angle XFE \cong \angle XSR$;
 $\angle XEF \cong \angle XRS$ (If lines \parallel , corr. \angle \cong .) 3. $\triangle FXE \sim \triangle SXR$ (AA \sim) b. 1. $\triangle FXE \sim \triangle SXR$ (Part (a), above)
 2. $\frac{FX}{SX} = \frac{EF}{RS}$ (Corr. sides of $\sim \triangle$ are in prop.) 23. 1. $\angle B \cong \angle C$ (Given) 2. $\angle 1 \cong \angle 2$ (Vert. \angle \cong .)
 3. $\triangle MLC \sim \triangle MNB$ (AA \sim) 4. $\frac{NM}{LM} = \frac{BM}{CM}$ (Corr. sides of $\sim \triangle$ are in prop.) 5. $NM \cdot CM = LM \cdot BM$
 (means-ext. prop.) 25. Key steps of proof: 1. $\angle B \cong \angle Y$ (Corr. \angle of $\sim \triangle$ are \cong .) 2. $\triangle ADB \sim \triangle XWY$
 (AA \sim) 3. $\frac{AD}{XW} = \frac{AB}{XY}$ (Corr. sides of $\sim \triangle$ are in prop.) 27. Key steps of proof: 1. $\triangle AHE \sim \triangle ADG$
 (AA \sim) 2. $\frac{AE}{AG} = \frac{HE}{DG}$ (Corr. sides of $\sim \triangle$ are in prop.) 3. $AE \cdot DG = AG \cdot HE$ (means-ext. prop.)
 29. Key steps of proof: 1. $\triangle ABC \sim \triangle ADB$ (AA \sim) 2. $\frac{AB}{AD} = \frac{AC}{AB}$ (Corr. sides of $\sim \triangle$ are in prop.)
 3. $(AB)^2 = AD \cdot AC$ (means-ext. prop.) 31. 20

Written Exercises, Pages 266–267

1. $\triangle BAC \sim \triangle EDC$; SAS \sim 3. $\triangle LKM \sim \triangle NPO$; SAS \sim 5. $\triangle ABC \sim \triangle AEF$; AA \sim
 7. $\triangle ABC \sim \triangle TRI$; 2:3 9. $\triangle ABC \sim \triangle ITR$; 2:5 11. 1. $\frac{DE}{GH} = \frac{DF}{GI} = \frac{EF}{HI}$ (Given)