

## 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)