

# Chapter 8 Answers

## Practice 8-1

1. 1:278
2. 18 ft by 10 ft
3. 18 ft by 14 ft
4. 18 ft by 16 ft
5. 8 ft by 8 ft
6. 3 ft by 10 ft
7. true
8. false
9. true
10. true
11. false
12. true
13. true
14. false
15. false
16. 12
17. 12
18. 33
19.  $\frac{21}{2}$
20.  $\pm 8$
21.  $\frac{49}{2}$
22. 6
23.  $\frac{4}{3}$
24.  $-\frac{2}{3}$
25. 14:5
26. 3:2
27. 12:7
28.  $\frac{4}{3}$
29.  $\frac{7}{13}$

## Practice 8-2

1.  $\triangle ABC \sim \triangle XYZ$ , with similarity ratio 2:1
2.  $\triangle QMN \sim \triangle RST$ , with similarity ratio 5:3
3. Not similar; corresponding sides are not proportional.
4. Not similar; corresponding angles are not congruent.
5.  $\triangle ABC \sim \triangle KMN$ , with similarity ratio 4:7
6. Not similar; corresponding sides are not proportional.
7.  $\angle I$
8.  $\angle O$
9.  $\angle J$
10. NO
11. LO
12. LO
13. 3.96 ft
14. 4.8 in.
15. 3.75 cm
16. 10 m
17.  $\frac{4}{3}$
18. 53
19.  $7\frac{1}{2}$
20.  $4\frac{1}{2}$
21. 55
22. 37
23. 5

## Practice 8-3

1.  $\angle AXB = \angle RXQ$  because vertical angles are  $\cong$ .  $\angle A = \angle R$  (Given). Therefore  $\triangle AXB \sim \triangle RXQ$  by the AA ~ Postulate.
2. Because  $\frac{MP}{LN} = \frac{PN}{LN} = \frac{2}{5} \cdot \frac{MN}{LN} = \frac{2}{5}$ ,  $\triangle MPX \sim \triangle LWA$  by the SSS ~ Theorem.
3.  $\angle QMP \cong \angle AMB$  because vertical  $\angle$ s are  $\cong$ . Then, because  $\frac{QM}{LM} = \frac{PM}{LM} = \frac{2}{5}$ ,  $\triangle QMP \sim \triangle AMB$  by the SAS ~ Theorem.
4.  $\angle M = \angle A$  (Given). Because there are  $180^\circ$  in a triangle,  $m\angle I = 130$ , and  $\angle I = \angle C$ . So  $\triangle MIN \sim \triangle ACB$  by the AA ~ Postulate.
5. Because  $AX = BX$  and  $CX = CX$ ,  $\frac{AX}{CX} = \frac{BX}{CX}$ ,  $\angle AXB = \angle CXR$  because vertical angles are  $\cong$ . Therefore  $\triangle AXB \sim \triangle CXR$  by the SAS ~ Theorem.
6. Because  $AB = BC = CA$  and  $XY = YZ = ZX$ ,  $\frac{AB}{XY} = \frac{BC}{YZ} = \frac{CA}{ZX}$ . Then  $\triangle ABC \sim \triangle XYZ$  by the SSS ~ Theorem.
7.  $\frac{1}{2}$
8.  $\frac{22}{3}$
9.  $\frac{45}{2}$
10.  $\frac{49}{2}$
11.  $\frac{49}{2}$
12. 36
13. 33 ft

## Practice 8-4

1. 16
2. 8
3.  $\sqrt{77}$
4.  $2\sqrt{11}$
5.  $10\sqrt{2}$
6.  $6\sqrt{3}$
7.  $b$
8.  $y$
9.  $x$
10.  $a$
11.  $b$
12.  $c$
13.  $x = 6$ ;  $y = 6\sqrt{3}$
14.  $x = 8\sqrt{3}$ ;  $y = 4\sqrt{3}$
15.  $\frac{40\sqrt{105}}{29}$
16.  $\frac{2}{3}$
17.  $x = 4\sqrt{5}$ ;  $y = \sqrt{55}$
18.  $x = \frac{45}{2}$ ;  $y = \frac{21}{2}$
19.  $x = \sqrt{3}$ ;  $y = \sqrt{6}$ ;  $z = \sqrt{2}$
20.  $x = \frac{3}{2}$ ;  $y = \frac{1}{2}$ ;  $z = \frac{1}{2}$
21.  $x = 8$ ;  $y = 2\sqrt{2}$ ;  $z = 6\sqrt{2}$
22.  $2\sqrt{15}$  in.

## Practice 8-5

1. BE
2. EH
3. BC
4. JD
5.  $\frac{49}{2}$
6. BE
7.  $\frac{49}{2}$
8. 4
9. 4
10.  $\frac{49}{2}$
11.  $x = \frac{25}{2}$ ;  $y = 4$
12.  $\frac{12}{5}$
13.  $x = \frac{45}{2}$ ;  $y = \frac{11}{2}$
14.  $x = 6$ ;  $y = 6$
15.  $x = \frac{140}{3}$ ;  $y = \frac{140}{3}$
16. 2
17. 4
18. 10

## Practice 8-6

1. 4:5; 16:25
2. 5:3; 25:9
3. 3:4; 9:16
4. 1:2
5. 9:5
6. 1:6
7. 8:3
8.  $\frac{225}{2}$  in.<sup>2</sup>
9.  $\frac{2250}{2}$  cm<sup>2</sup>
10.  $\frac{1152}{5}$  in.<sup>2</sup>
11. 2:3
12. 1:2
13. 2:5
14. 108 ft<sup>2</sup>

## Reteaching 8-1

1. 534 apples
2. 768 gallons
3. 4627 employees
4. about 4800 picture frames
5. 90
6. 2450
7. 85
8. 560
9. 58
10. 7308
11. 12
12. 20,250
13. 2500

## Reteaching 8-2

1.  $\triangle KLM \sim \triangle QRS$ ; 5:3
2.  $\triangle ABC \sim \triangle XYZ$ ; 10:7
3. not similar
4. not similar
5.  $\triangle MPR \sim \triangle QAC$ ; 1:1
6. not similar
7. similar with ratio 10:11
8. not similar
9. similar with ratio 4:9

## Reteaching 8-3

1.  $\triangle ABC \sim \triangle ZYX$  by AA ~
2. not similar
3.  $\triangle QEU \sim \triangle SJO$  by SSS ~
4.  $\triangle ABC \sim \triangle RST$  by AA ~
5. not similar
6.  $\triangle BAC \sim \triangle XQR$  by SAS ~
7. yes, by SSS ~ or by AA ~
8. No; the vertex angles may differ in measure.
9. All congruent triangles are similar with ratio 1:1. Similar triangles are not necessarily congruent.

## Reteaching 8-4

1.  $x = \frac{25}{2}$ ;  $y = \frac{145}{2}$ ;  $z = \frac{91}{2}$
2.  $x = \frac{400}{29}$ ;  $y = \frac{441}{29}$
3.  $x = 48$ ;  $y = 8$
4.  $x = 12$ ;  $y = 16$
5.  $x = \sqrt{2}$ ;  $y = \sqrt{3}$ ;  $z = \sqrt{6}$
6.  $x = 2\sqrt{10}$ ;  $y = \sqrt{15}$ ;  $z = 2\sqrt{6}$
7.  $\frac{120}{13}$
8.  $\frac{45}{\sqrt{85}} = \frac{45\sqrt{85}}{85}$
9.  $\sqrt{\frac{49}{25} + \frac{16}{25}}$

## Reteaching 8-5

1.  $x = 45$
2.  $x = \frac{5}{2}$
3.  $x = 7.2$ ;  $y = 4.8$
4.  $x = \frac{12}{5}$ ;  $y = \frac{20}{5}$
5.  $x = 9$
6.  $x = \frac{3}{2}$ ;  $y = \frac{3}{2}$
7.  $BN = \frac{10}{3}$ ;  $CN = \frac{20}{3}$
8.  $BY = \frac{4}{3}$

## Reteaching 8-6

1. 4:3; 16:9
2. 8:5; 64:25
3. 9:3; 81:25
4. 4:3
5. 4:5
6. 3:5
7. 16:9
8. 16:25
9. 9:25

# Pearson Education Algebra 1 Chapter 10 Answers

**Ying Liu**



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