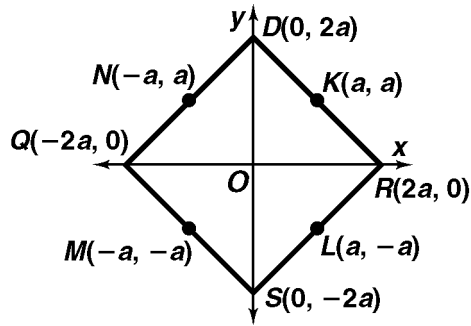


Answers for Chapter 6, pp. 726-727 Extra Practice (cont.)

- 32.** Given: Square \overline{DRSQ} with K, L, M, N midpts. of $\overline{DR}, \overline{RS}, \overline{SQ}$, and \overline{QD} , respectively. Prove: $KLMN$ is a square.



$K(a, a), L(a, -a), M(-a, -a),$ and $N(-a, a)$ are midpts. of the sides of the square. $KL = LM = MN = NK = 2a$. The slopes of \overline{KL} and \overline{MN} are undefined. The slopes of \overline{LM} and \overline{NK} are 0, so adj. sides are \perp to each other. Since all \sphericalangle s are rt. \sphericalangle s, the quad. is a rectangle. A rectangle with all E sides is a square.

- 33.** The line through $R(2a, 0)$ and $M(-a, b)$ is $y = \frac{b}{-3a}(x - 2a)$.
 The line through $Q(-2a, 0)$ and $N(a, b)$ is $y = \frac{b}{3a}(x + 2a)$.
 For each line, when $x = 0, y = \frac{2b}{3}$, so the three medians all contain point $H(0, \frac{2b}{3})$.

Answers for Chapter 7, pp. 728-729 Extra Practice

1. 10

2. 36

3. 2

4. 6

5. $\frac{9}{2}$

6. 21

7. $x = \frac{80}{3}; y = 6; z = \frac{16}{3}$

8. $x = 3\sqrt{10}; y = 2\sqrt{10}$

9. $x = 30; y = 4$

10. $x = 12; y = 8$

11. No; sample sketch: a square and a rhombus

12. Yes; $\triangle QCT \sim \triangle MCP$ by SAS \sim .

13. Yes; $\triangle XZY \sim \triangle EWN$ by AA \sim .

14. no

15. Yes; $\triangle ABC \sim \triangle EBD$ by AA \sim .

16. Yes; $\triangle XYZ \sim \triangle PRQ$ by SSS \sim .

17. Yes; $\triangle HJK \sim \triangle RST$ by SAS \sim .

18. $\triangle CAB \sim \triangle CED$ by SSS \sim . $\angle E$ as corres. \angle s of $\sim \triangle$ s, so $\overline{AB} \parallel \overline{ED}$ by the Conv. of the Alt. Int. \angle Thm.

19. $x = \sqrt{5}; y = 2; z = 2\sqrt{5}$

20. $x = \sqrt{70}; y = \sqrt{21}; z = \sqrt{30}$

21. $x = 65; y = 60; z = 156$

22. $x = 6; y = 2\sqrt{5}; z = 3\sqrt{5}$

23. Place $\triangle ABC$ in the coordinate plane with $A(-a, 0), B(b, 0),$
 $C(0, \sqrt{ab})$ (given), and $D(0,0)$. Slope of $\overleftrightarrow{AC} = \frac{\sqrt{ab}}{a}$. Slope
of $\overleftrightarrow{BC} = \frac{\sqrt{ab}}{-b}$ The product $\frac{\sqrt{ab}}{a} \cdot \frac{\sqrt{ab}}{-b} = \frac{ab}{-ab} = -1$, so
 $\overleftrightarrow{AC} \perp \overleftrightarrow{BC}$.

Answers for Chapter 7, pp. 728-729 Extra Practice

24. $\frac{60}{13}$

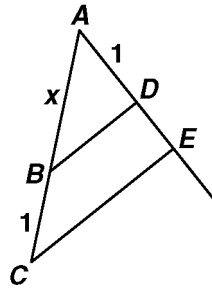
25. $\frac{72}{5}$

26. $\frac{117}{10}$

27. 20

28. $\frac{56}{3}$

29.



Construct \overline{AC} with $\overline{AB} = x$ and $BC = 1$. On another line from A , construct \overline{AD} of length 1. Construct a line through $C \parallel$ to \overline{BD} and intersecting \overline{AD} in E . By the Side-Splitter Thm., $\frac{x}{1} = \frac{1}{DE}$, so $DE = \frac{1}{x}$.

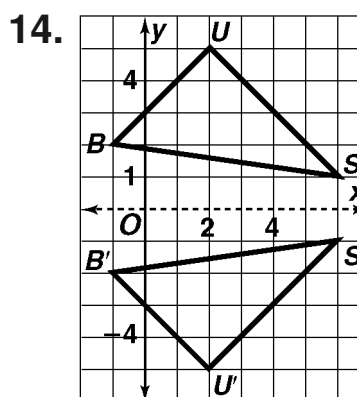
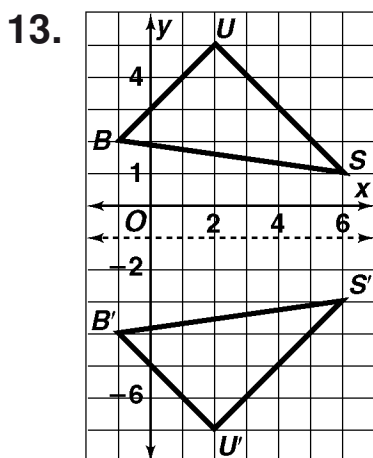
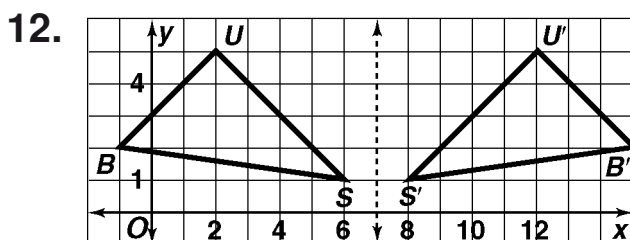
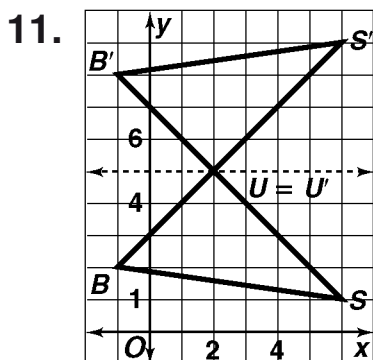
30. 4.5 mi

Answers for Chapter 8, pp. 730-731 Extra Practice

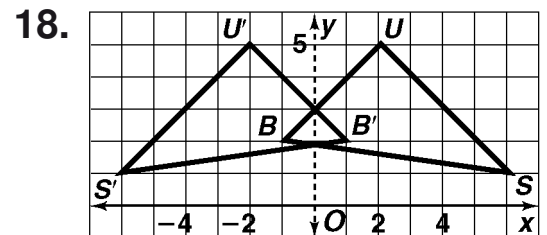
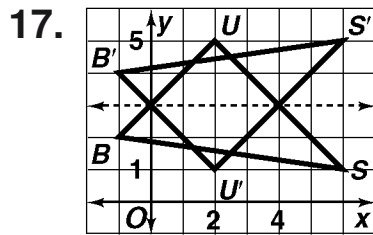
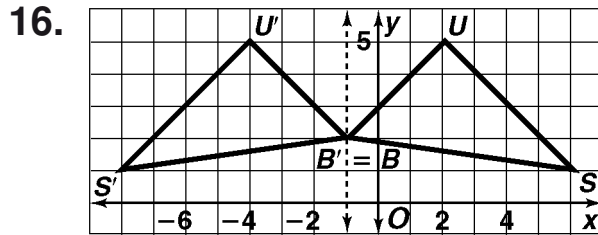
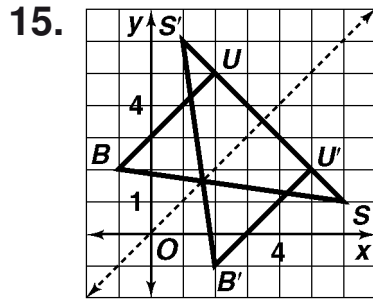
1. 15
2. $5\sqrt{3}$
3. $3\sqrt{5}$
4. $3\sqrt{2}$
5. 188 ft.
6. $6\sqrt{2}$ cm, $6\sqrt{2}$ cm
7. 13 cm, $13\sqrt{3}$ cm
8. $8\sqrt{3}$ in., 16 in.
9. $\sqrt{2}$ units, $\sqrt{2}$ units, 2 units
10. 5.6
11. 29
12. 11.0
13. 9.4
14. 49
15. 50
16. 7.2
17. 49
18. No; sample: in the plan, change 100 ft to 114.5 ft
19. about 66.4°
20. 53.2 ft
21. 4.6 ft
22. 653 ft
23. 139 ft
24. 78 ft
25. 90 ft; 143 ft
26. 2000 ft
27. a. $\langle -49, 142 \rangle, \langle 38, 47 \rangle$
b. $\langle -11, 189 \rangle$
28. a. $\langle -118, -55, 86, 110 \rangle$
b. $\langle -32, 55 \rangle$
29. a. $\langle -54, 72 \rangle, \langle -95, -33 \rangle$
b. $\langle -149, 39 \rangle$
30. a. $\langle -21, -56, 27, -64 \rangle$
b. $\langle 6, -120 \rangle$
31. $\langle 2, 11 \rangle$
32. $\langle 3, -6 \rangle$
33. $\langle 2, 13 \rangle$
34. $\langle 0, 0 \rangle$
35. about 56.8 km; about 14.3° north of west

Answers for Chapter 9, pp. 732-733 Extra Practice

1. E
2. $(x, y) \rightarrow (x - 2, y + 4)$
3. C
4. $(x, y) \rightarrow (x + 4, y - 2)$
5. G
6. $(x, y) \rightarrow (x - 8, y)$
7. $A'(-5, 9), B'(-3, 3), C'(-1, 10)$
8. $E'(1, 0), F'(7, -4), G'(5, -1)$
9. $P'(-15, -11), Q'(-11, -6), R'(-4, 1)$
10. Sample: $(x, y) \rightarrow (x, y + 4), (x, y) \rightarrow (x - 4, y)$

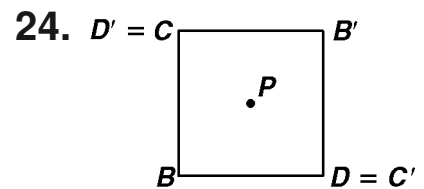
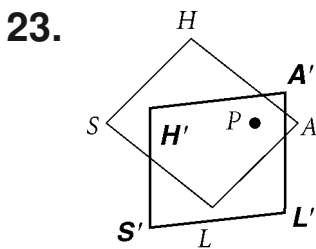
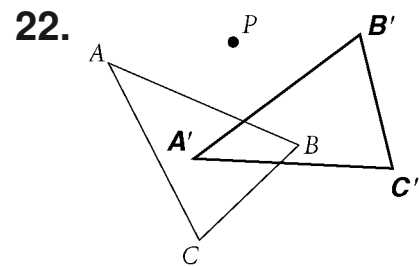
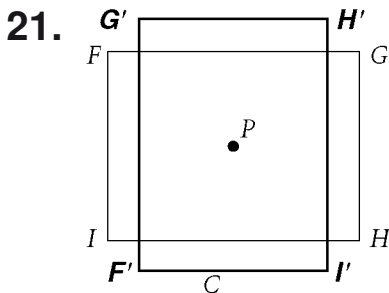


Answers for Chapter 9, pp. 732-733 Extra Practice (cont.)



19. A and I

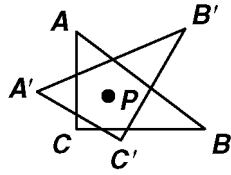
20. rectangle



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Answers for Chapter 9, pp. 732-733 Extra Practice (cont.)

25.



26. 40°

27. line, rotation, point

28. line

29. line

30. line, rotation, point

31. a. isosceles

b. equilateral

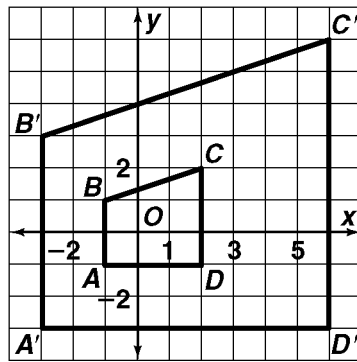
32. rotation

33. dilation

34. translation

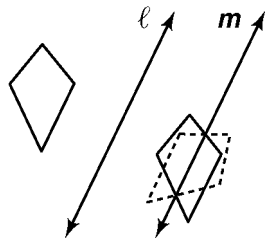
35. glide reflection

36.

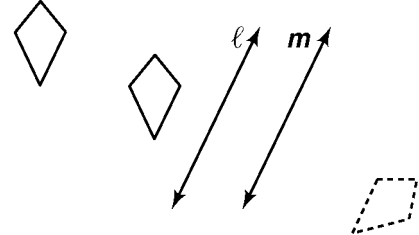


37. Translate the polygon using $(x, y) \rightarrow (x - 2, y - 5)$. Then dilate with center $(0,0)$ and scale factor 3. Then translate using $(x, y) \rightarrow (x + 2, y + 5)$

38. Reflect over ℓ , then over m .



Reflect over m , then over ℓ .



39. all of them.

40.

