

ANSWERS

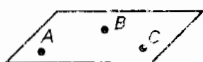
Chapter 1

Section 1.1

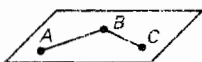
1. C 2. B 3. C 4. D 5. B 6. C
 7. a. row 5: 1, 4, 6, 4, 1; row 6: 1, 5, 10, 10, 5, 1 b. The first and last number in each row is 1. Every other number in each row is formed by adding the two numbers immediately above the number. c. Each row has one more entry than the previous row.

Section 1.2

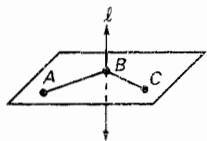
1. D 2. E 3. B 4. E 5. E 6. B 7. B
 8. B
 9. a.



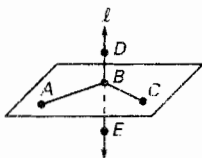
b.



c.



d.



Section 1.3

1. E 2. B 3. D 4. B 5. A 6. C 7. C
 8. A 9. C 10. D 11. A 12. A 13. D

Section 1.4

1. C 2. A 3. D 4. C 5. B 6. B 7. A
 8. C

Section 1.5

1. C 2. B 3. D 4. A 5. B 6. B 7. C
 8. E 9. C 10. B

Section 1.6

1. D 2. D 3. D 4. C 5. C 6. B 7. B
 8. C 9. C 10. C

Section 1.7

1. C 2. B 3. D 4. C 5. E 6. E 7. C
 8. D 9. C 10. A
 11. a. 2000 in.² b. 180 in.
 c. 2279 in.²; 192 in.; about 14.0%

Chapter 2

Section 2.1

1. C 2. B 3. A 4. D 5. E 6. B
 7. a. If there are three noncollinear points, then there is exactly one plane containing those points.
 b. If there is exactly one plane containing three points, then they are noncollinear points.
 c. If there are not three noncollinear points, then there is not exactly one plane containing them.
 d. If there is not exactly one plane containing three points, then the three points are not noncollinear. e. yes

Section 2.2

1. E 2. B 3. D 4. A 5. A 6. B 7. D

Section 2.3

1. C 2. A 3. E 4. C 5. A 6. C
 7. a. If you get caught exceeding the speed limit, then you will get a speeding ticket.
 b. If you get a speeding ticket, then you will pay higher insurance rates. c. If you do not get a speeding ticket, then you do not get caught exceeding the speed limit; $\sim q \rightarrow \sim p$
 d. If you get caught exceeding the speed limit, then you will pay higher insurance rates; statement p must be true for q and r to be true.

Section 2.4

1. E 2. B 3. C 4. B 5. A 6. D
 7. a. Angle addition postulate b. given
 c. Substitution property d. given
 e. Substitution property f. Distributive property

Answers continued

- g. Given that $m\angle ABE = m\angle EBC$ and $m\angle EBD = m\angle DBC$, it can be shown that $m\angle ABE = 2(m\angle EBD)$ using the angle addition postulate, substitution property, and distribution property of equality.

Section 2.5

1. E 2. D 3. C 4. B 5. E 6. C 7. B
8. B

Section 2.6

1. D 2. E 3. D 4. C 5. A 6. B 7. D
8. B 9. C 10. A

Chapter 3

Section 3.1

1. E 2. E 3. B 4. D 5. C 6. C 7. E
8. A
9. a. $\overleftrightarrow{EH}, \overleftrightarrow{FG}, \overleftrightarrow{BC}$ b. $\overleftrightarrow{DC}, \overleftrightarrow{AB}, \overleftrightarrow{AE}, \overleftrightarrow{DH}$
c. $\overleftrightarrow{AB}, \overleftrightarrow{EF}, \overleftrightarrow{BC}, \overleftrightarrow{FG}$ d. all of parts (a) and (c)

Section 3.2

1. B 2. D 3. C 4. E 5. C 6. C 7. B
8. A

Section 3.3

1. E 2. C 3. B 4. B 5. C 6. C 7. A
8. C

Section 3.4

1. B 2. D 3. E 4. B 5. D 6. A

Section 3.5

1. E 2. A 3. D 4. D 5. E 6. D

7. Sample answers:

a. Statements	Reasons
1. $a \parallel b, m \parallel n,$ $a \perp m$	1. Given
2. $\angle 1$ is a right angle.	2. Def. of perp. lines
3. $\angle 3 \cong \angle 1$	3. Corresp. \angle Post.
4. $\angle 3$ is a right angle.	4. Substitution prop.
5. $a \perp n$	5. Def. of perp. lines

b. Statements

1. $a \perp n, \angle 3$ is a right angle.
2. $\angle 3 \cong \angle 4$
3. $\angle 4$ is a right angle.
4. $b \perp n$

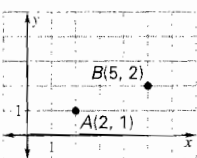
Reasons

1. Proven in part (a)
2. Alt. int. \angle Theorem
3. Substitution prop.
4. Def. of perp. lines

Section 3.6

1. B 2. D 3. C 4. C 5. E 6. A 7. A
8. B 9. B

Section 3.7

1. B 2. E 3. C 4. A 5. A 6. C 7. E
8. a.  b. $y = \frac{1}{3}x + \frac{1}{3}$
c. $y = -3x + 7$
d. $y = -3x + 17$
e. $m = \frac{1}{3}$

Chapter 4

Section 4.1

1. E 2. C 3. D 4. C 5. D 6. D 7. B
8. E 9. B

Section 4.2

1. C 2. D 3. B 4. A 5. D 6. E 7. A
8. B

Section 4.3

1. E 2. C 3. A 4. A 5. C 6. E 7. A
8. B 9. D 10. C 11. D

12. Sample answers:

a. Statements	Reasons
1. $\overline{AB} \cong \overline{AF}, \overline{BD} \cong \overline{FD}$	1. Given
2. $\overline{AD} \cong \overline{AD}$	2. Reflexive Prop. of Congruence
3. $\triangle ADF \cong \triangle ADB$	3. SSS Congruence Postulate

Answers continued

b. Statements	Reasons
1. $\overline{AD} \cong \overline{AD}$	1. Reflexive Prop. of Congruence
2. $\triangle ADF \cong \triangle ADB$	2. Proven in part (a)
3. $\angle DAF \cong \angle DAB$	3. Def. of congruent triangles
4. $\overline{AB} \cong \overline{AF}$, $\overline{BC} \cong \overline{FE}$	4. Given
5. $AB = AF$, $BC = FE$	5. Def. of congruent segments
6. $AF + FE = AE$, $AB + BC = AC$	6. Segment Addition Postulate
7. $AF + BC = AC$	7. Substitution prop. of equality
8. $AF + FE = AC$	8. Substitution prop. of equality
9. $AE = AC$	9. Transitive prop. of equality
10. $\overline{AE} \cong \overline{AC}$	10. Def. of congruent segments
11. $\triangle ACD \cong \triangle AED$	11. SAS Congruence Postulate

c. Statements	Reasons
1. $\overline{BC} \cong \overline{FE}$, $\overline{BD} \cong \overline{FD}$	1. Given
2. $\triangle ACD \cong \triangle AED$	2. Proven in part (b)
3. $\overline{CD} \cong \overline{ED}$	3. Def. of congruent triangles
4. $\triangle BCD \cong \triangle FED$	4. SSS Congruence Postulate

Section 4.4

1. C 2. D 3. B 4. D 5. A 6. D 7. C

8. Sample answers:

a. Statements	Reasons
1. $\overline{AB} \parallel \overline{CD}$, $\overline{CB} \parallel \overline{DE}$, $\overline{AB} \cong \overline{CD}$	1. Given
2. $\angle ABC \cong \angle BCD$, $\angle BCD \cong \angle CDE$	2. Alt. Int. Angles Theorem
3. $\angle ABC \cong \angle CDE$	3. Transitive prop. of congruence
4. $\angle BAC \cong \angle DCE$	4. Corresp. \angle Postulate
5. $\triangle ABC \cong \triangle CDE$	5. ASA Congruence Postulate

b. Statements	Reasons
1. $\overline{AC} \cong \overline{CE}$	1. Def. of congruent triangles
2. $AC = CE$	2. Def. of \cong
3. C is midpoint of \overline{AE} .	3. Def. of midpoint

Section 4.5

1. D 2. C 3. C 4. C 5. D 6. A 7. B
8. C 9. A 10. E 11. E 12. B 13. C

14. a. Statements	Reasons
1. $\angle 1 \cong \angle 3$, $\angle 2 \cong \angle 4$	1. Given
2. $\overline{AG} \cong \overline{AG}$	2. Reflexive Property of Congruence
3. $\triangle AGC \cong \triangle AGE$	3. AAS Congruence Theorem

b. Statements	Reasons
1. $\angle 2 \cong \angle 4$	1. Given
2. $\angle BGC \cong \angle FGE$	2. Vert. Angles Thm.
3. $\overline{GC} \cong \overline{GE}$	3. Corresp. parts of \cong triangles are \cong .
4. $\triangle BCG \cong \triangle FEG$	4. ASA Congruence Postulate

c. Statements	Reasons
1. $\overline{GD} \cong \overline{GD}$	1. Reflexive Prop. of Congruence
2. $\angle AGC \cong \angle AGE$, $\overline{GC} \cong \overline{GE}$	2. Corresp. parts of \cong triangles are \cong .
3. $m\angle AGC = m\angle AGE$	3. Def. of congruence
4. $m\angle AGC + m\angle CGD = 180^\circ$, $m\angle AGE + m\angle EGD = 180^\circ$	4. Def. of linear pair
5. $m\angle AGC + m\angle EGD = 180^\circ$	5. Substitution prop. of equality
6. $\angle EGD \cong \angle CGD$	6. Congruent Supplements Thm.
7. $\triangle CDG \cong \triangle EDG$	7. SAS Congruence Postulate

Answers continued

Section 4.6

1. B 2. D 3. E 4. B 5. A 6. D 7. C
8. D 9. A

Section 4.7

1. D 2. B 3. C 4. D 5. B 6. E 7. A
8. C

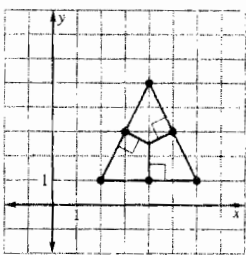
Chapter 5

Section 5.1

1. E 2. C 3. B 4. A 5. A 6. A

Section 5.2

1. B 2. B 3. B 4. A 5. C 6. E
7. a. circumcenter

- b.  c. $(4, \frac{5}{2})$
d. 2.5 miles

Section 5.3

1. D 2. D 3. E 4. A 5. B 6. C 7. A
8. B 9. D

Section 5.4

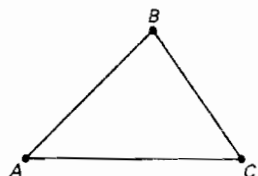
1. A 2. D 3. E 4. C 5. B 6. C 7. B
8. C

Section 5.5

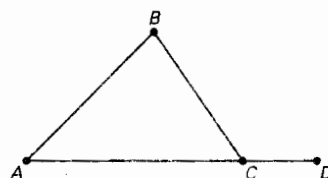
1. C 2. A 3. D 4. D 5. B 6. E 7. A
8. A

Section 5.6

1. E 2. C 3. D 4. B 5. A
6. a.



b.



- c. 125° d. \overline{BC} e. $m\angle BCD \neq m\angle A + m\angle B$

Chapter 6

Section 6.1

1. A 2. C 3. D 4. D 5. E 6. C 7. D
8. B

Section 6.2

1. C 2. E 3. B 4. B 5. D 6. E 7. A
8. C

Section 6.3

1. E 2. C 3. C 4. C 5. B

6. a. The slope of \overline{BD} and \overline{AC} is $\frac{3}{2}$, so $\overline{BD} \parallel \overline{AC}$.
The slope of \overline{AD} and \overline{CB} is $\frac{1}{3}$, so $\overline{AD} \parallel \overline{CB}$.

b. $AD = CB = \sqrt{10}$, so $\overline{AD} \cong \overline{CB}$;

$CA = BD = \sqrt{13}$, so $\overline{CA} \cong \overline{BD}$

c. equation for \overleftrightarrow{CD} : $y = \frac{4}{5}x - \frac{7}{5}$;

equation for \overleftrightarrow{AB} : $y = -2x + 14$;

lines intersect at $E(\frac{11}{2}, 3)$; $CE = ED = 3$;

$$AE = EB = \frac{\sqrt{5}}{2}$$

Section 6.4

1. B 2. B 3. D 4. E 5. E 6. A 7. C
8. D 9. A 10. C

Section 6.5

1. B 2. C 3. C 4. D 5. D 6. A 7. B
8. A

Section 6.6

1. A 2. D 3. C 4. C 5. D 6. B

Answers continued

7. a. $\frac{3}{2}$ b. 1 c. $\overline{DG} \cong \overline{EF}$ because opposite sides of rectangle are congruent.
 $m\angle DGF = m\angle EFG = 90^\circ$ by def. of a rectangle.
 $m\angle EFC + m\angle EFG = 180^\circ$ and
 $m\angle DGA + m\angle DGF = 180^\circ$ because linear angles are supplementary. $m\angle DGA + 90^\circ = 180^\circ$ and $m\angle EFC + 90^\circ = 180^\circ$ by Substitution Prop. of Equality. $m\angle DGA = m\angle EFC = 90^\circ$ by Subtraction Prop. of Equality.
 $m\angle A = m\angle B = m\angle C = 60^\circ$ because regular triangles have 3 congruent angles.
 $\triangle ADG \cong \triangle CEF$ by AAS.

Section 6.7

1. D 2. B 3. A 4. C 5. E 6. D 7. A
 8. a. 20 ft² b. 92 in.² c. 11.25 ft²

Cumulative Review

Chapters 1–6

1. B 2. C 3. C 4. D 5. A 6. B
 7. A 8. C 9. a. If you stay up late, then you are tired. b. If you are tired, then you are cranky. c. $\sim q \rightarrow \sim p$; if you are not tired, then you did not stay up late. d. If you stay up late, then you are cranky. 10. C 11. E 12. D
 13. B 14. C 15. A 16. B 17. D 18. C
 19. A 20. D 21. B 22. B 23. E 24. D
 25. E 26. C 27. C 28. D 29. A 30. D
 31. B 32. B 33. B

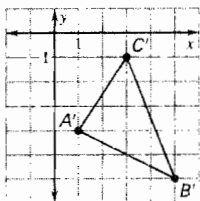
Chapter 7

Section 7.1

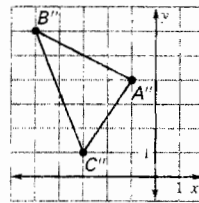
1. D 2. C 3. B 4. D 5. B 6. A

Section 7.2

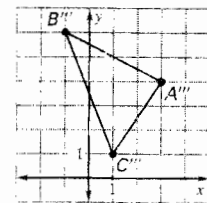
1. D 2. B 3. E 4. C 5. B 6. E 7. A
 8. a. $A'(1, -4)$, $B'(5, -6)$, $C'(3, -1)$ b. $\overline{A'B'}$



- c. $A''(-1, 4)$, $B''(-5, 6)$, $C''(-3, 1)$



- d. $A'''(3, 4)$, $B'''(-1, 6)$, $C'''(1, 1)$



- e. (1, 0)

Section 7.3

1. B 2. C 3. D 4. E 5. C 6. A 7. A

Section 7.4

1. C 2. D 3. B 4. E 5. D 6. B

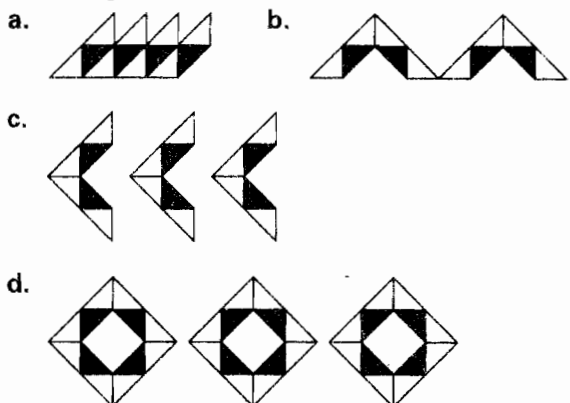
Section 7.5

1. C 2. A 3. A 4. B 5. D

Section 7.6

1. C 2. B 3. E 4. E 5. B 6. A

7. Sample answers:



Chapter 8

Section 8.1

1. B 2. C 3. B 4. D 5. E 6. E 7. B
 8. C 9. A

Section 8.2

1. D 2. C 3. C 4. D 5. E 6. D 7. C
 8. A 9. B 10. C

Section 8.3

1. C 2. B 3. D 4. E 5. D 6. A 7. C
 8. C