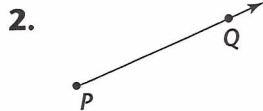


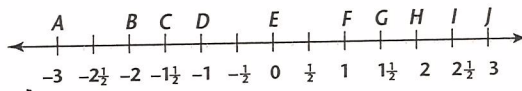
* Only Complete Even Numbers

Chapter 1 Supplementary Problems

Tell whether each figure is a point, a line, a line segment, or a ray. Then use symbols to name each figure.



Use the Ruler Postulate to name the real number or letter corresponding to the point named.



7. A

9. H

11. $-1\frac{1}{2}$

13. 1

15. G

8. -2

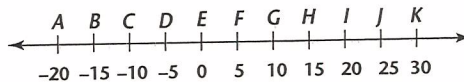
10. $2\frac{1}{2}$

12. J

14. E

16. -1

Find the distance between the points.



17. B and E

19. E and F

21. C and D

23. C and E

25. A and D

18. G and I

20. F and H

22. D and F

24. B and G

26. B and I

Chapter 1 Supplementary Problems

Write the letter of the answer to each question.

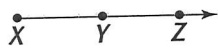
- 27.** How many points are used to name a line?
A none **B** one **C** two
- 28.** How many dimensions does a plane have?
A none **B** one **C** two
- 29.** What geometric term can you use to describe beads on a string?
A points on a ray **B** points on a line segment **C** points on a line
- 30.** What are points on the same line called?
A collinear points **B** parallel points **C** endpoints

Name each figure in another way.

31. \overleftrightarrow{AC}



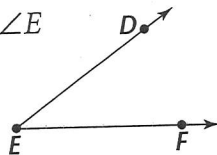
32. \overleftrightarrow{XZ}



33. \overline{QR}

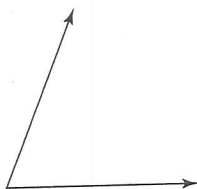


34. $\angle E$

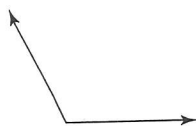


Copy each angle. Then bisect each angle using a compass and straightedge.

35.



36.



Chapter 1 Supplementary Problems

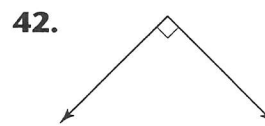
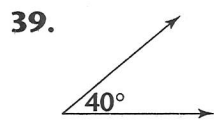
Classify each angle. Write *acute*, *right*, *obtuse*, or *straight*.

37. $m\angle DEF = 90^\circ$

40. $m\angle Q = 120^\circ$

38. $m\angle XYZ < 90^\circ$

41. $m\angle 2 = 180^\circ$



Find the measure of each angle.

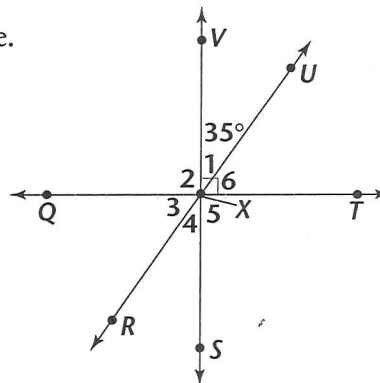
43. $m\angle 2$

44. $m\angle 6$

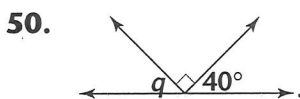
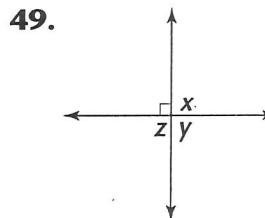
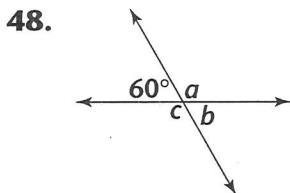
45. $m\angle 4$

46. $m\angle 3$

47. $m\angle VXS$



Solve for the missing angle(s).



Chapter 2 Supplementary Problems

Copy each statement. Draw one line under the hypothesis.
Circle the conclusion.

1. If an angle is a right angle, then its measure is 90° .
2. If an angle is a straight angle, then its measure is 180° .
3. If a figure is a quadrilateral, then it has 4 sides.
4. If two angles have equal measures, then they are congruent.
5. If an animal is an insect, then it has 6 legs.

Write the converse of each conditional and tell whether it is true or false.

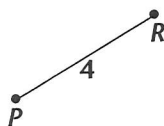
6. If a figure has three sides, then it is a triangle.
7. If two angles are supplementary, then the sum of their measures is 180° .
8. If it is raining, then the sun is not shining.
9. If you are a citizen of the United States, then you must pay taxes.

Decide which postulate allows the construction.

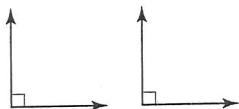
10. Connect the points with line segments to form a rectangle.



11. Draw circle P with radius 4.

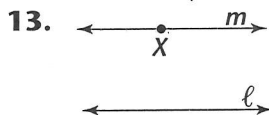


12. Draw two right angles equal to one another.

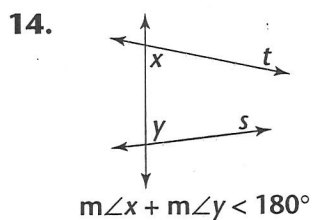


Chapter 2 Supplementary Problems

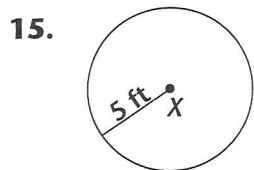
Decide which postulate allows the conclusion to be made.



Conclusion: Line m is the only line that passes through point X and is parallel to line l .



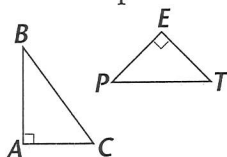
Conclusion: Lines t and s are intersecting lines.



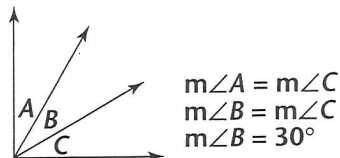
Conclusion: Circle X is shown with a radius of 5 feet.

Answer each question. Tell which postulate or axiom you used.

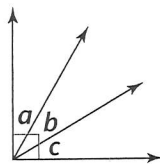
16. Is $m\angle A = m\angle E$?



17. What is the measure of $\angle A$?

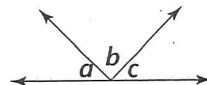


18. Which angles, or sum of angles, have a measure less than 90° ?



Chapter 2 Supplementary Problems

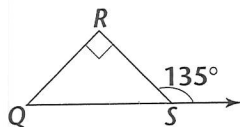
19. If $m\angle a + m\angle b = m\angle b + m\angle c$, does $m\angle a = m\angle c$?



20. If $4x + 16 = 56$, does $4x = 40$?

Find the measures of angles Q , R , and S .

21.

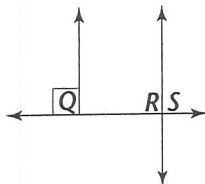


$$m\angle Q = m\angle S$$

22.



23.



$$m\angle Q = m\angle R$$

Give a reason for each of the following statements. Use the diagram at the right.

24. $m\angle e = m\angle c$

25. $m\angle a = m\angle c$

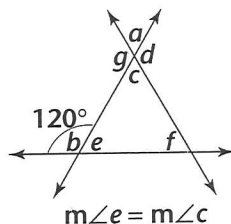
26. $m\angle e = 60^\circ$

27. $m\angle b - m\angle c = m\angle b - m\angle a$

28. $m\angle f < 180^\circ$

29. $m\angle c + m\angle d = 180^\circ$

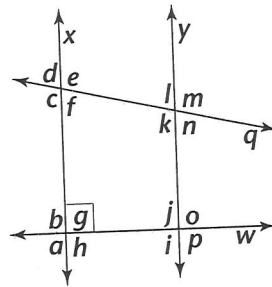
30. $m\angle e + m\angle f < 180^\circ$



Chapter 3 Supplementary Problems

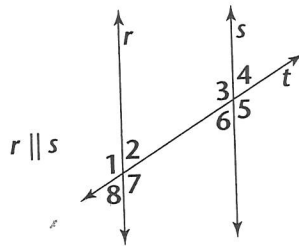
Use the figure to identify lines or angles as described below.

1. parallel line
2. transversal
3. a pair of acute, vertical angles
4. a pair of obtuse, vertical angles
5. intersecting lines
6. a pair of acute, alternate interior angles



Classify each pair of angles. Write *alternate interior*, *alternate exterior*, *corresponding*, or *supplementary*.

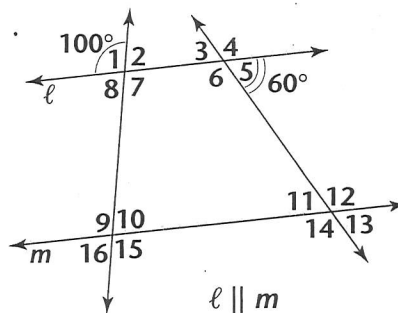
- | | |
|-------------------------------|-------------------------------|
| 7. $\angle 1$ and $\angle 2$ | 12. $\angle 1$ and $\angle 5$ |
| 8. $\angle 3$ and $\angle 7$ | 13. $\angle 6$ and $\angle 8$ |
| 9. $\angle 4$ and $\angle 8$ | 14. $\angle 2$ and $\angle 3$ |
| 10. $\angle 2$ and $\angle 6$ | 15. $\angle 1$ and $\angle 3$ |
| 11. $\angle 6$ and $\angle 7$ | 16. $\angle 1$ and $\angle 4$ |



Chapter 3 Supplementary Problems

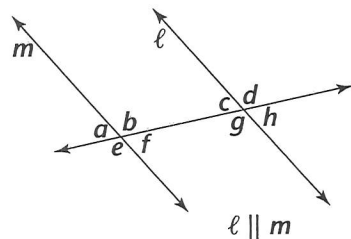
Find the measure of each angle.

- | | |
|-----------------|-----------------|
| 17. $\angle 2$ | 23. $\angle 16$ |
| 18. $\angle 9$ | 24. $\angle 13$ |
| 19. $\angle 4$ | 25. $\angle 8$ |
| 20. $\angle 6$ | 26. $\angle 10$ |
| 21. $\angle 11$ | 27. $\angle 3$ |
| 22. $\angle 12$ | 28. $\angle 14$ |



Use the theorems about parallel lines to find the measure of each angle.

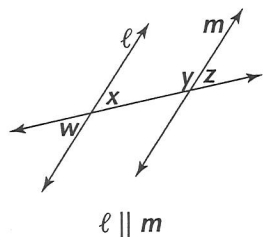
29. The measure of $\angle b$ is twice that of $\angle c$.



$$m\angle b = \underline{\hspace{2cm}}$$

$$m\angle c = \underline{\hspace{2cm}}$$

30. The measure of $\angle w$ is $\frac{1}{3}$ that of $\angle y$.



$$m\angle w = \underline{\hspace{2cm}}$$

$$m\angle y = \underline{\hspace{2cm}}$$

Chapter 3 Supplementary Problems

Use definitions and theorems to complete the statements.

31. $\overline{GA} \parallel$ _____

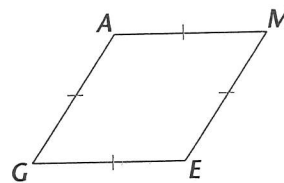
32. $\overline{EM} \cong$ _____

33. $\overline{AM} \parallel$ _____

34. $m\angle A + m\angle$ _____ $= 180^\circ$

35. $m\angle M + m\angle$ _____ $= 180^\circ$

36. $m\angle E \cong m\angle$ _____



Rhombus *GAME*

Complete the following constructions on a separate sheet of paper.
Use only a straightedge and a compass.

37. a square with a $1\frac{1}{2}$ -inch base

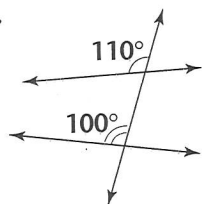
38. a rectangle with 3-in. and 5-in. sides

39. a trapezoid with a right angle, height of 1 in., and bases of 2 in. and 4 in.

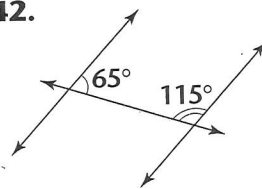
40. a trapezoid with no right angles

Write *parallel* or *not parallel* for each pair of lines crossed by a third line.

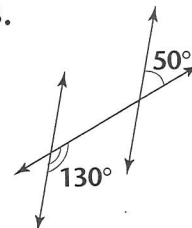
41.



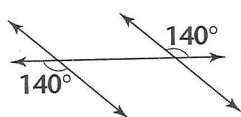
42.



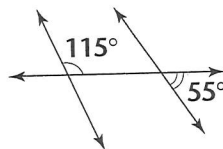
43.



44.



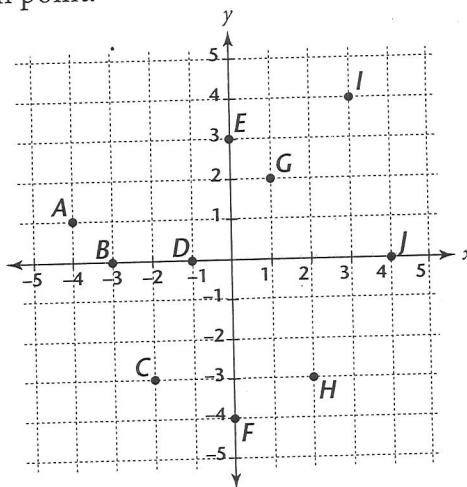
45.



Chapter 4 Supplementary Problems

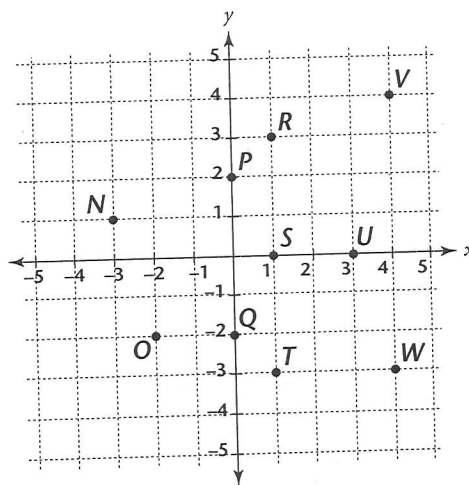
Name the ordered pair that corresponds to each point.

- | | |
|--------------------|---------------------|
| 1. <i>G</i> | 6. <i>I</i> |
| 2. <i>A</i> | 7. <i>D</i> |
| 3. <i>C</i> | 8. <i>H</i> |
| 4. <i>J</i> | 9. <i>B</i> |
| 5. <i>F</i> | 10. <i>E</i> |



Name the point located at each ordered pair.

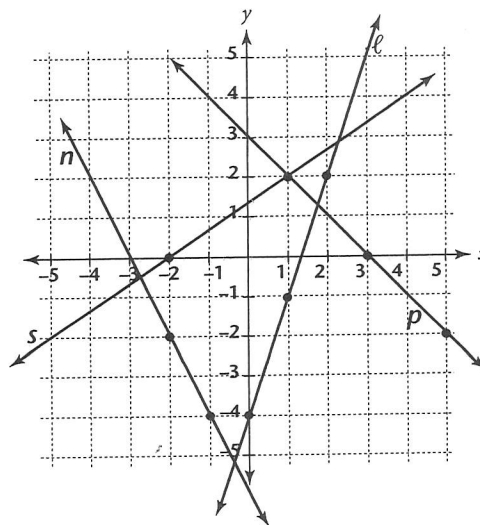
- | | |
|-----------------------|----------------------|
| 11. $(1, 0)$ | 16. $(1, 3)$ |
| 12. $(4, -3)$ | 17. $(4, 4)$ |
| 13. $(3, 0)$ | 18. $(0, 2)$ |
| 14. $(-3, 1)$ | 19. $(1, -3)$ |
| 15. $(-2, -2)$ | 20. $(0, -2)$ |



Chapter 4 Supplementary Problems

Find the slope, m , of each line.

- 21. line ℓ
- 22. line s
- 23. line n
- 24. line p



Find the slope, m , of the line that passes through the given points.

- 25. (1, 2) and (0, 0)
- 26. (3, 0) and (2, 0)
- 27. (8, 3) and (4, 1)
- 28. (4, 0) and (2, 2)
- 29. (-3, -3) and (5, 2)
- 30. (10, -6) and (1, -6)

Write the equation of the line that passes through each pair of points in problems 25–30 above.

Use the form $y = mx + b$.

- | | |
|----------------|----------------|
| 31. problem 25 | 34. problem 28 |
| 32. problem 26 | 35. problem 29 |
| 33. problem 27 | 36. problem 30 |

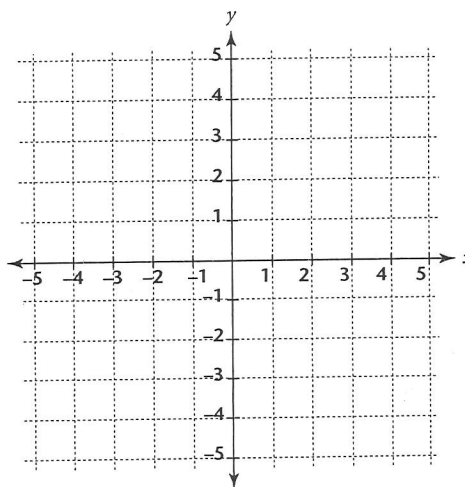
Chapter 4 Supplementary Problems

Find another point on each line using the slope and point given.

- 37. ℓ ; $m = 3$; passes through $(-2, 4)$
- 38. t ; $m = \frac{2}{5}$; passes through $(1, -4)$
- 39. r ; $m = -2$; passes through $(-1, 3)$
- 40. q ; $m = -\frac{3}{4}$; passes through $(0, 0)$

Make a grid and graph each of the lines described in problems 37–40 above. Connect the points with a line.

- 41. line ℓ
- 42. line t
- 43. line r
- 44. line q

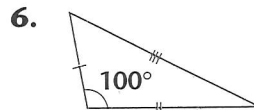
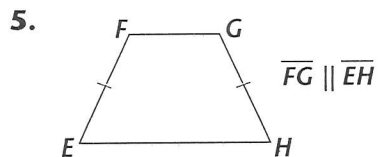
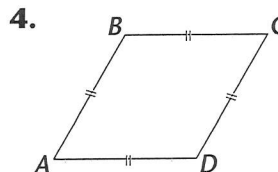
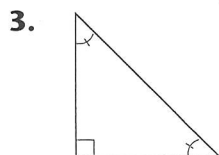
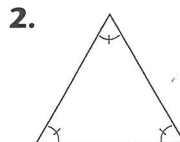
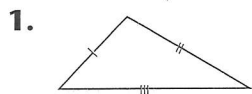


Use the midpoint formula to find the midpoints of line segments having the following endpoints.

- 45. $(1, 1)$ and $(5, 7)$
- 46. $(3, 4)$ and $(-1, 2)$
- 47. $(8, -3)$ and $(-2, 5)$
- 48. $(12, 8)$ and $(6, -4)$
- 49. $(0, 6)$ and $(4, 0)$
- 50. $(1, 5)$ and $(-6, 7)$

Chapter 5 Supplementary Problems

Name the polygon as precisely as you can.



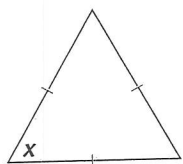
Complete the following constructions on a separate sheet of paper. Use only a straightedge and a compass.

7. Construct an equilateral triangle.
8. Draw any scalene triangle and label the angles X , Y , and Z . Construct the altitude from X to \overline{YZ} .
9. Construct a scalene right triangle.
10. Construct a 30° - 60° right triangle.
11. Construct $\triangle LMN$ with $LM = LN$ and $m\angle L > 90^\circ$.

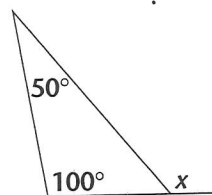
Chapter 5 Supplementary Problems

Find the measure of $\angle x$.

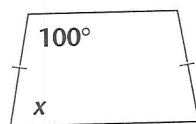
12.



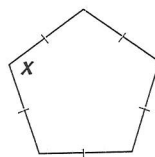
13.



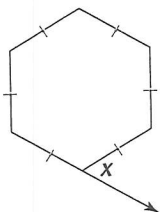
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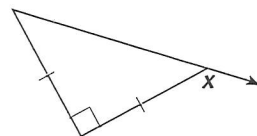
15.



16.



17.



Use the information given to find the angles' measures.

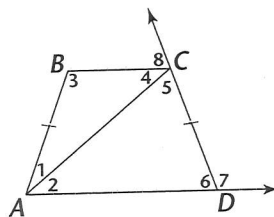
18. $m\angle 2$

19. $m\angle 3$

20. $m\angle 8$

21. $m\angle 5$

22. $m\angle 4$



$ABCD$ is an isosceles trapezoid
 $m\angle 7 = 110^\circ$
 $m\angle 1 = 30^\circ$

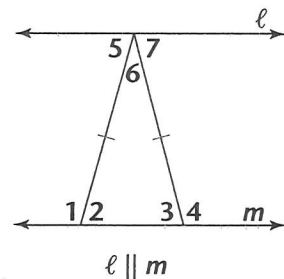
Chapter 5 Supplementary Problems

Answer the questions.

23. What is an altitude?
24. What is the sum of the measures of the interior angles of a regular octagon?
25. What is the measure of each angle in an equilateral triangle?
26. What is the measure of each interior angle of a 9-sided regular polygon?
27. How can you find the measure of an exterior angle of a triangle?
28. Is a trapezoid a parallelogram? Why or why not?
29. How can you find the number of triangles formed in a polygon by the diagonals from one vertex?
30. What is a median?

Use the information given to answer the questions.

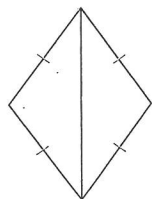
31. Which angles are congruent to $\angle 2$?
32. If $m\angle 6 = 40^\circ$, what is the sum of $m\angle 5$ and $m\angle 7$?
33. If $m\angle 2 = 70^\circ$ and $m\angle 4 = 110^\circ$, what is $m\angle 6$?
34. Which angle measure equals the sum of $m\angle 6$ and $m\angle 2$?
35. Are $\angle 1$ and $\angle 4$ exterior angles? Why or why not?



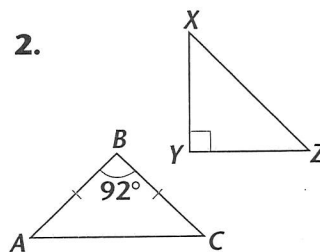
Chapter 6 Supplementary Problems

Tell whether the triangles in each pair are congruent. Write *yes* or *no*.
 If your answer is *yes*, name the postulate that supports your answer.
 If your answer is *no*, explain why.

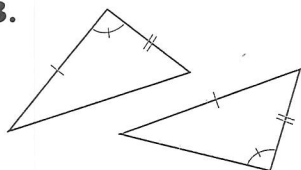
1.



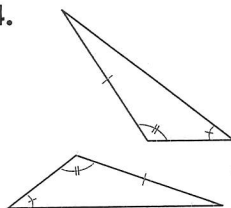
2.



3.



4.



Tell whether you can construct a triangle with the given sides. Write *yes* or *no*.

5.

$$\frac{a}{b} \quad \frac{c}{c}$$

9.

$$\frac{a}{b} \quad \frac{c}{c}$$

6. $a = 6, b = 3, c = 7$

10. $a = 8, b = 3, c = 4$

7. $a = 14, b = 12, c = 5$

11. $a = 5, b = 6, c = 18$

8. $a = 5, b = 5, c = 10$

12. $a = 9, b = 9\frac{1}{2}, c = 18$

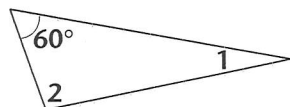
Chapter 6 Supplementary Problems

Solve the following the problems.

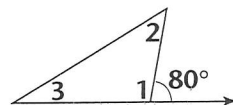
13. $x + 2x + 3x = 180^\circ$

14. $3x + 5x = 120^\circ$

15. If $m\angle 1$ is half $m\angle 2$,
what is $m\angle 1$? $\angle 2$?



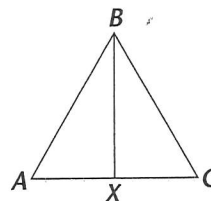
16. If $m\angle 2 = m\angle 3$,
what is $m\angle 2$? $\angle 3$?



Complete the proof.

Given: $\triangle ABC$ is an equilateral triangle.
 \overline{BX} is a perpendicular bisector.

Prove: $\triangle ABX \cong \triangle CBX$

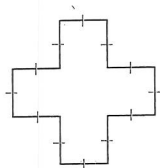


PROOF	Statement	Reason
	1. \overline{BX} is a perpendicular bisector.	1. <u>17.</u>
	2. $AB = CB$	2. <u>18.</u>
	3. $AX = XC$	3. <u>19.</u>
	4. $BX = BX$	4. <u>20.</u>
	5. $\triangle ABX \cong \triangle CBX$	5. <u>21.</u>

Chapter 6 Supplementary Problems

Tell how many lines of symmetry each figure has.

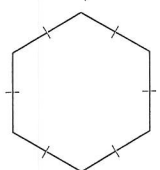
22.



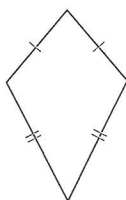
23.



24.



25.



Identify the coordinate of the image of each point under the translation $(x + 3, y - 2)$.

26. $F = (8, 0)$

30. $R = (3, 2)$

27. $H = (12, -10)$

31. $B = (-5, -2)$

28. $T = (9, -7)$

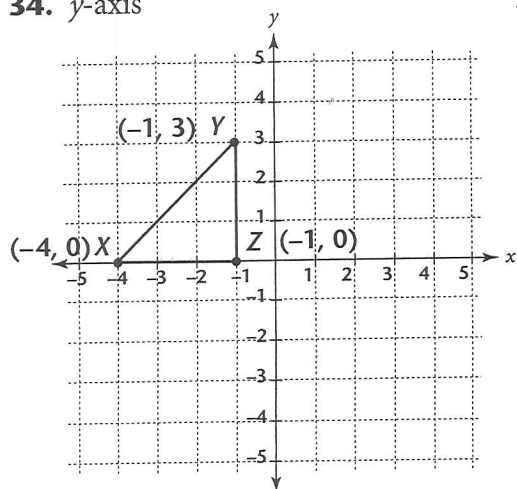
32. $P = (-28, -45)$

29. $S = (-12, 3)$

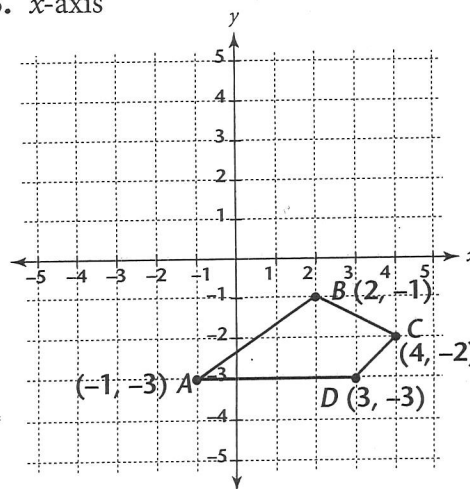
33. $D = (-3, 4)$

Reflect each image over the indicated axis. Give the coordinates of the image vertices.

34. y -axis



35. x -axis



Chapter 7 Supplementary Problems

Are the following ratios equal? Write yes or no.

1. $\frac{6}{7}$ and $\frac{12}{14}$

6. $\frac{5}{8}$ and $\frac{10}{16}$

2. $\frac{1}{3}$ and $\frac{4}{11}$

7. $\frac{11}{10}$ and $\frac{110}{100}$

3. $\frac{2}{5}$ and $\frac{7}{17}$

8. $\frac{8}{3}$ and $\frac{24}{9}$

4. $\frac{6}{7}$ and $\frac{12}{14}$

9. $\frac{7}{16}$ and $\frac{21}{32}$

5. $\frac{9}{12}$ and $\frac{2}{3}$

10. $\frac{3}{25}$ and $\frac{1}{5}$

Find the missing value in each proportion.

11. $\frac{3}{5} = \frac{27}{x}$

13. $\frac{7}{9} = \frac{56}{y}$

15. $\frac{3}{7} = \frac{18}{z}$

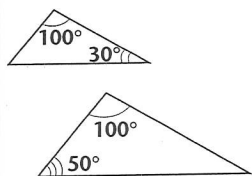
12. $\frac{5}{8} = \frac{z}{32}$

14. $\frac{3}{11} = \frac{r}{121}$

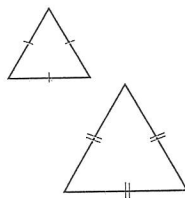
16. $\frac{4}{5} = \frac{m}{15}$

Tell whether the triangles in each pair are similar. Answer yes or no. Give reasons for your answer.

17.



18.



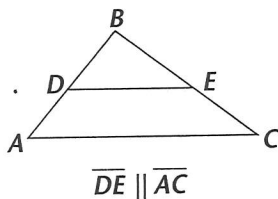
Name the corresponding angles and sides of the similar triangles.

19. $m\angle BDE = \blacksquare$

20. $m\angle C = \blacksquare$

21. $\frac{DB}{AB} = \frac{BE}{\blacksquare}$

22. $\frac{AC}{\blacksquare} = \frac{BC}{\blacksquare}$



Chapter 7 Supplementary Problems

Find the measure of each interior angle for a regular polygon with the given number of sides.

23. $n = 15$

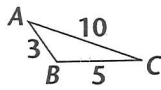
24. $n = 18$

Complete the following construction on a separate sheet of paper. Use only a straightedge and a compass.

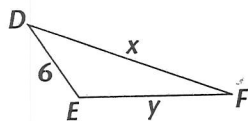
25. Construct a regular hexagon.

Solve for the unknown value in each pair of similar triangles.

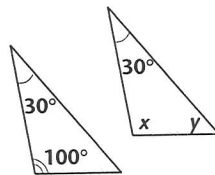
26. x



27. y



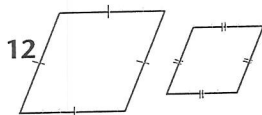
28. x



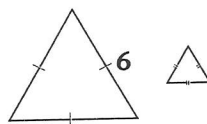
29. y

Find the perimeter of each polygon.

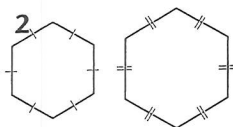
30. The ratio of similarity is 3:2



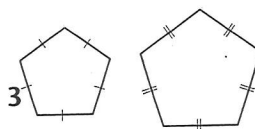
31. The ratio of similarity is 3:1



32. The ratio of similarity is 4:5



33. The ratio of similarity is 3:4



Chapter 7 Supplementary Problems

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6. $\frac{5}{8}$ and $\frac{10}{16}$

2. $\frac{1}{3}$ and $\frac{4}{11}$

7. $\frac{11}{10}$ and $\frac{110}{100}$

3. $\frac{2}{5}$ and $\frac{7}{17}$

8. $\frac{8}{3}$ and $\frac{24}{9}$

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9. $\frac{7}{16}$ and $\frac{21}{32}$

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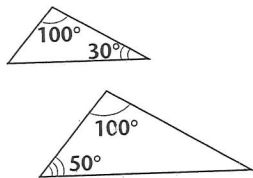
12. $\frac{5}{8} = \frac{z}{32}$

14. $\frac{3}{11} = \frac{r}{121}$

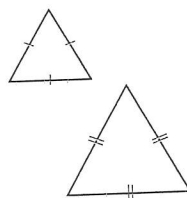
16. $\frac{4}{5} = \frac{m}{15}$

Tell whether the triangles in each pair are similar. Answer yes or no. Give reasons for your answer.

17.



18.



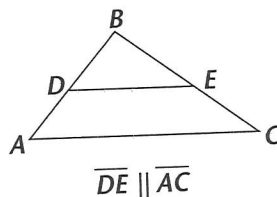
Name the corresponding angles and sides of the similar triangles.

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20. $m\angle C = \blacksquare$

21. $\frac{DB}{AB} = \frac{BE}{\blacksquare}$

22. $\frac{AC}{\blacksquare} = \frac{BC}{\blacksquare}$



Chapter 7 Supplementary Problems

Find the measure of each interior angle for a regular polygon with the given number of sides.

23. $n = 15$

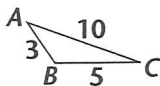
24. $n = 18$

Complete the following construction on a separate sheet of paper. Use only a straightedge and a compass.

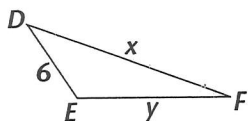
25. Construct a regular hexagon.

Solve for the unknown value in each pair of similar triangles.

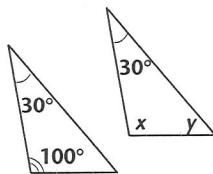
26. x



27. y



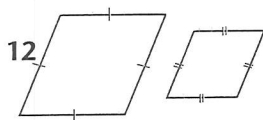
28. x



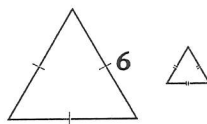
29. y

Find the perimeter of each polygon.

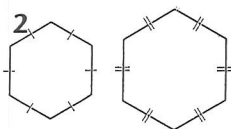
30. The ratio of similarity is 3:2



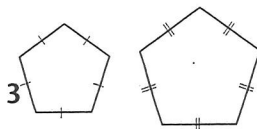
31. The ratio of similarity is 3:1



32. The ratio of similarity is 4:5



33. The ratio of similarity is 3:4



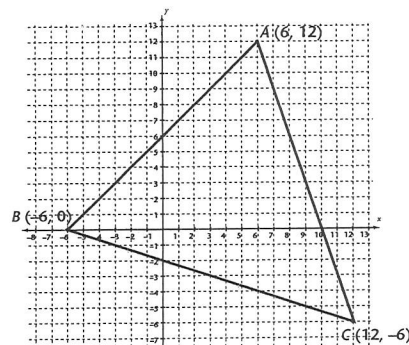
Chapter 7 Supplementary Problems

Give the coordinates of the image triangle under the following dilations. Use graph paper to graph the object and its image. (All dilations have $(0, 0)$ as the center of the dilation.)

34. dilation of 3

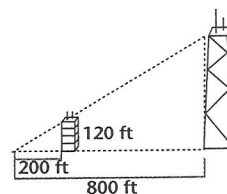
35. dilation of $\frac{1}{2}$

36. dilation of $\frac{1}{3}$

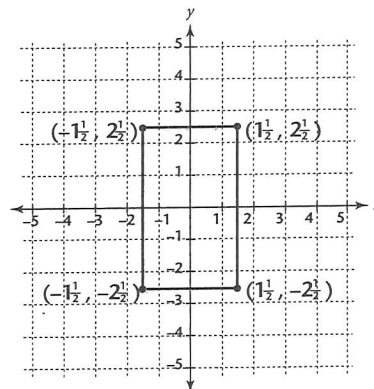


Solve the following problems.

37. To find the height of a building, an engineer used similar triangles and the height of a smaller building to draw the diagram shown. What is the height of the taller building?



38. Jonas is making a poster by making a 3×5 -inch photo 4 times larger. He drew the size of the photo on a grid as shown. What will the coordinates of the poster be if Jonas draws its image on the grid?



39. A model airplane has a ratio of similarity with the actual airplane of 1:240. If the model measures $4\frac{1}{4}$ inches, what is the measurement of the actual airplane?

40. A model sailboat has a ratio of similarity with an actual sailboat of 1:28. If the actual sailboat measures 42 feet, what is the measurement of the model sailboat?

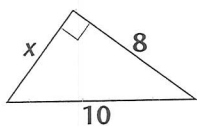
Chapter 8 Supplementary Problems

Find additional triples using the given triples and multiplier.

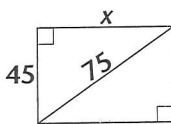
- | | |
|--|--|
| <p>1. triple (3, 4, 5) by 2</p> <p>2. triple (3, 4, 5) by 8</p> <p>3. triple (3, 4, 5) by 10</p> | <p>4. triple (5, 12, 13) by 2</p> <p>5. triple (5, 12, 13) by 3</p> <p>6. triple (5, 12, 13) by 10</p> |
|--|--|

Find the length of the unknown side of each right triangle.

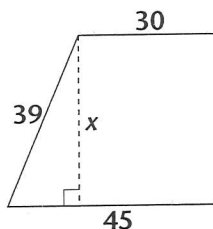
7.



8.



9.



One leg of an isosceles right triangle is given. Solve for the hypotenuse.

- | | |
|---|---|
| <p>10. 5 cm</p> <p>11. 12 ft</p> <p>12. 1 in.</p> | <p>13. 2 m</p> <p>14. 7 mi</p> <p>15. 25 yd</p> |
|---|---|

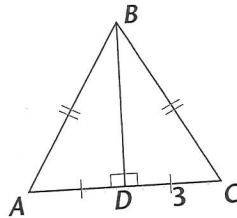
The hypotenuse of a 30° - 60° right triangle is given. Solve for both legs.

- | | |
|---|---|
| <p>16. 18 m</p> <p>17. 4 yd</p> <p>18. 12 in.</p> | <p>19. 24 ft</p> <p>20. 40 cm</p> <p>21. 2 mi</p> |
|---|---|

Chapter 8 Supplementary Problems

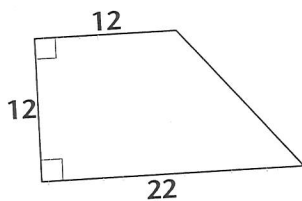
Answer the following questions about equilateral $\triangle ABC$.

22. What is the length of \overline{AD} ?
23. What is the length of \overline{AB} ?
24. What is the length of \overline{BC} ?
25. What is $m\angle BDC$?
26. What is $m\angle BCD$?
27. What is $m\angle DBC$?
28. What is a name for $\triangle ABD$?
29. What is the length of \overline{BD} ?

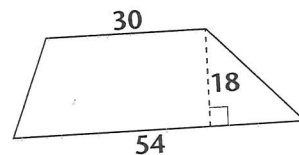


Find the area of each trapezoid.

30.

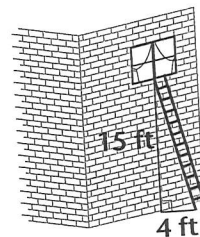


31.



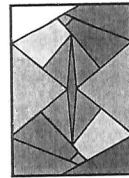
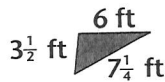
Solve the following problems.

32. A window washer uses a ladder to reach a window 15 feet high. The base of the ladder must be placed at least 4 feet from the wall for safety reasons. Will a 16-foot ladder reach the window?

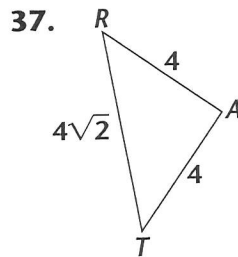
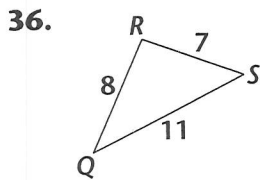
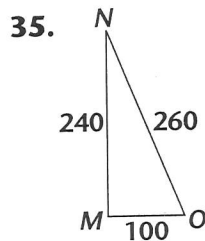
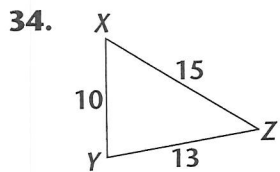


Chapter 8 Supplementary Problems

- 33.** Charlotte cut a triangular piece of glass to fit in a 90° corner of the frame of a large stained-glass window. After cutting the piece, she measures the lengths of the sides and finds they are $3\frac{1}{2}$ ft, 6 ft, and $7\frac{1}{4}$ ft. Will the piece of glass fit in the corner? Explain your answer.



Tell whether or not each triangle is a right triangle. Answer *yes* or *no*. If it is, name the right angle.

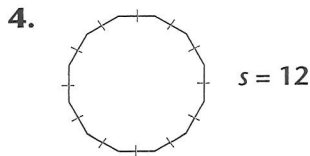
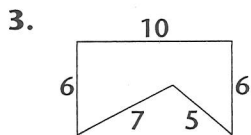
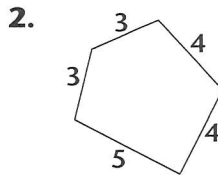
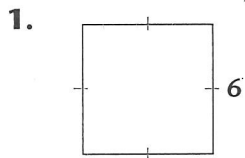


Use the distance formula to find the distances between the given points. Round to the nearest tenth.

- 38.** $(-4, -6)$ and $(8, 10)$
39. $(8, 10)$ and $(20, 32)$
40. $(9, -5)$ and $(20, -10)$

Chapter 9 Supplementary Problems

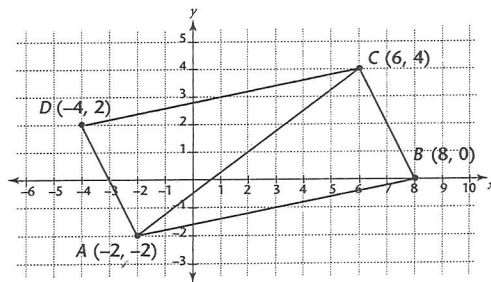
Find the perimeter of each polygon.



5. rhombus, $s = 125$

6. rectangle, $l = 14$, $w = 10$

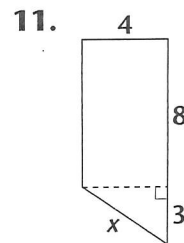
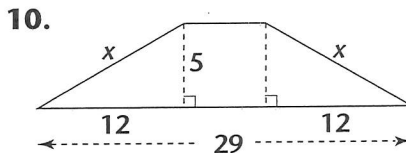
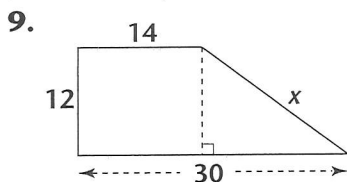
Find the perimeter of the following figures. Use the distance formula to find side length, then calculate the perimeter of each figure. (Use a calculator and round to the nearest tenth.)



7. $\triangle ABC$

8. $ABCD$

Use the Pythagorean Theorem to find the length of the unknown side. Then find the perimeter.



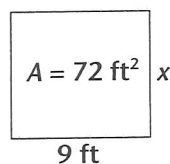
Chapter 9 Supplementary Problems

Solve the following problems.

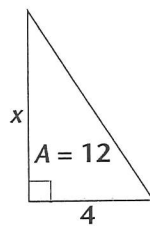
12. What are the length and width of a rectangle that has a perimeter of 60 and a length 2 times the width?
13. Three times the base of a parallelogram is equal to 4 times the height. The parallelogram has a perimeter of 42. What is its base? Height?
14. What is the length of the diagonal of a square with an area of 64?
15. The length of a rectangle is 4 times the width. The perimeter of the rectangle is 120. What are the length and width of the rectangle?
16. Narinda will put seed on 600 square feet of backyard. Her backyard is 25 feet long. How wide is her backyard?
17. Victor is painting 11 square feet of baseboard around his kitchen. The baseboard is $\frac{1}{4}$ foot wide. The kitchen is 12 feet long. How wide is the kitchen?

Find the length of the unknown side.

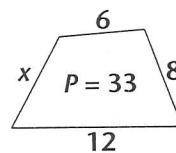
18.



19.

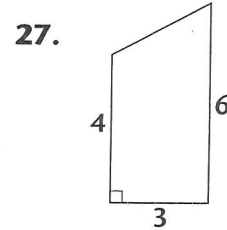
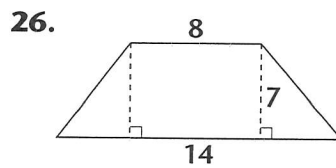
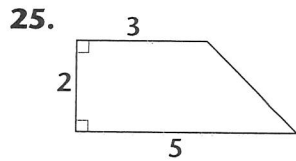
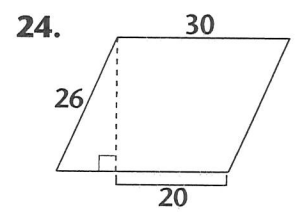
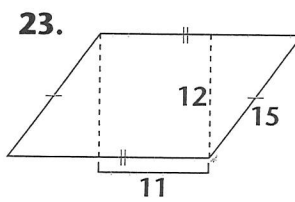
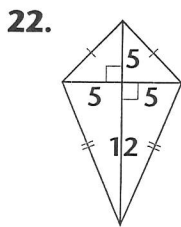
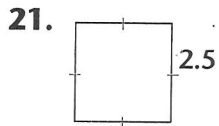


20.



Chapter 9 Supplementary Problems

Find the area of each quadrilateral.



Use Heron's Formula to find the areas of triangles with the given side lengths. Use a calculator and round to the nearest tenth.

28. 9, 10, 13

29. 4, 5, 7

30. 10, 10, 16

31. 12, 12, 12

Find the area of each triangle.

