

15. no
16. $90^\circ - 43^\circ = 47^\circ$
17. no
18. If the midpoint of line segment DP is point A, A is the middle point of the line segment.
19. slope = -2; y-intercept = 4
20. slope = 1; y-intercept = -2

Lesson Practice 9A

1. $A = bh = (12.4)(10.6) \approx 131.4 \text{ ft}^2$
2. $A = \text{average base} \times \text{height} =$
 $(\frac{10+15}{2})(5) = (\frac{25}{2})(5)$
 $= \frac{125}{2} = 62.5 \text{ ft}^2$
3. $A = \frac{1}{2}bh = \frac{1}{2}(19)(11) = 104.5 \text{ m}^2$
4. $A = (\frac{9.2+11.8}{2})(7.4) = 77.7 \text{ in}^2$
5. $A = (8)(6) = 48 \text{ in}^2$
6. $A = \frac{1}{2}(4)(6) = 12 \text{ ft}^2$
7. $A = (6)(6) = 36 \text{ m}^2$
8. $A = (\frac{5.6+7.8}{2})(3.5) = 23.45 \text{ in}^2$
9. $A = \frac{1}{2}(5)(4.3) = 10.75 \text{ cm}^2$
10. $A = (67)(100) = 6,700 \text{ cm}^2$
11. $A = (2.1)(4.5) = 9.45 \text{ ft}^2$
12. $A = \frac{1}{2}(7)(3) = 10.5 \text{ ft}^2$
13. base, height
14. average
15. half

Lesson Practice 9B

1. $A = (7.4)(4.75) = 35.15 \text{ in}^2$
2. $A = (\frac{9.2+11.8}{2})(7.4) = 77.7 \text{ in}^2$

3. $A = \frac{1}{2}(9.2)(5.5) = 25.3 \text{ m}^2$
4. $A = (\frac{12+16}{2})(8) = 112 \text{ in}^2$
5. $A = (\frac{9+13}{2})(3) = 33 \text{ ft}^2$
6. $A = \frac{1}{2}(3.3)(5.5) = 9.075 \text{ ft}^2$
7. $A = (.05)(.05) = .0025 \text{ m}^2$
8. $A = (\frac{112+156}{2})(70) = 9,380 \text{ ft}^2$
9. $A = \frac{1}{2}(5.33)(3.5) = 9.3275 \text{ ft}^2$
10. $A = (2.33)(1.2) = 2.796 \text{ in}^2$
11. $A = (4)(10) + (2)(3) = 40 + 6 = 46 \text{ in}^2$
12. $A = \frac{1}{2}(28)(12) = 168 \text{ ft}^2$
13. perpendicular
14. trapezoid
15. rectangle

Systematic Review 9C

1. $A = \frac{1}{2}(5)(6) = 15 \text{ cm}^2$
2. $A = (\frac{13+21}{2})(12) = 204 \text{ in}^2$
3. $A = (7)(6) = 42 \text{ ft}^2$
4. $A = (1.5)(4.5) = 6.75 \text{ in}^2$
5. rectangle, square
6. parallelogram, rectangle, square, rhombus
7. square
8. trapezoid
9. a quadrilateral with two pairs of parallel sides
10. a quadrilateral with two pairs of parallel sides and four congruent sides and four right angles
11. yes: corresponding angles
12. yes: alternate interior angles

13. yes: $\angle 5 \cong \angle 7$ because they are corresponding angles, and $\angle 7 \cong \angle 15$ because they are also corresponding angles.
14. 84° : alternate interior angles
15. 96° : $m\angle 10 = m\angle 5$: alternate interior angles. $m\angle 14 = 180^\circ - 84^\circ = 96^\circ$: supplementary angles
 $m\angle 11 = m\angle 14$: alternate interior angles
(There are several ways to find the answer.)
16. 84° : $m\angle 5 = m\angle 10$: alternate interior angles
 $m\angle 12 = m\angle 10$: corresponding angles
17. 105° : $m\angle 13 = m\angle 5$: corresponding angles
 $m\angle 14 = 180^\circ - 75^\circ$: supplementary angles
18. 75° : corresponding angles
19. 75° : alternate exterior angles
20. length of base:
 $7 + 3 = 10$ in
length of unlabeled vertical side:
 $6 - 4 = 2$ in
 $P = 3 + 6 + 10 + 4 + 7 + 2 = 32$ in
8. false: It has 2 pairs of parallel sides.
If a parallelogram contains one right angle, then it will contain four right angles, and will be a rectangle, which is a special kind of parallelogram.
9. true
10. false: They add up to 360° .
11. yes: They are all 90° , because it is given that the lines are perpendicular.
12. 79° : vertical angles
13. 79° : corresponding angles
14. $m\angle 3 = 180^\circ - 79^\circ = 101^\circ$: supplementary angles
15. yes
16. $\angle 16$
17. $\angle 6$ and $\angle 9$; $\angle 5$ and $\angle 10$; $\angle 7$ and $\angle 12$; or $\angle 8$ and $\angle 11$
18. $\angle 1$ and $\angle 14$; $\angle 2$ and $\angle 13$; $\angle 4$ and $\angle 15$; or $\angle 3$ and $\angle 16$
19. vertical
20. If a quadrilateral is a trapezoid, it has only one pair of parallel sides.

Systematic Review 9D

1. $A = \frac{1}{2}(8)(8) = 32 \text{ cm}^2$
2. $A = \left(\frac{6.5 + 10.5}{2}\right)(6) = 51 \text{ in}^2$
3. $A = (11)(12) = 132 \text{ ft}^2$
4. $A = (5.1)(2.2) = 11.22 \text{ in}^2$
5. true
6. true
7. false: Reflex angles measure between 180° and 360° . A 175° angle is obtuse.

Systematic Review 9E

1. $A = \left(\frac{1}{2}\right)(8)(4) = 16 \text{ cm}^2$
2. $P = 8 + 7.8 + 5 = 20.8 \text{ cm}$
3. $A = \left(\frac{7 + 13}{2}\right)(3) = 30 \text{ in}^2$
4. $P = 5 + 7 + 13 + 3.5 = 28.5$ in
5. length of unlabeled horizontal side: $14 - 5 - 5 = 4 \text{ cm}$
 $A = (3)(5) + (3)(4) + (14)(5) = 15 + 12 + 70 = 97 \text{ cm}^2$
6. $P = 14 + 8 + 4 + 3 + 5 + 3 + 5 + 8 = 50 \text{ cm}$
7. 90° : It is given that $\overleftrightarrow{MP}$ is perpendicular to $\overleftrightarrow{LN}$.

8. $m\angle 1 + m\angle 3 + m\angle 4 = 180^\circ$
because they are the three angles
of a triangle. Since $m\angle 4 = 90^\circ$,
 $m\angle 1 + m\angle 3 + 90^\circ = 180^\circ$,
or $m\angle 1 + m\angle 3 = 90^\circ$.
9. bisector
10. perpendicular bisector
11. find the average base
12. congruent
13. 360°
14. 360°
15. check with ruler: line
segment should measure $3\frac{1}{2}$ in
16. check with ruler:
line segment on each side of the
bisector should measure $1\frac{3}{4}$ in
17. $A = (2X)(2X) = 4X^2 \text{ units}^2$
 $P = 2X + 2X + 2X + 2X = 8X \text{ units}$
18. $A = (A)(2A) = 2A^2 \text{ units}^2$
 $P = A + 2A + A + 2A = 6A \text{ units}$
19. $A = \frac{1}{2}bh = \frac{1}{2}(A)(B) = \frac{AB}{2}$ or $\frac{1}{2}AB \text{ units}^2$
 $P = A + B + C \text{ units}$
20. $A = \left(\frac{4X+6X}{2}\right)(2X) = \left(\frac{10X}{2}\right)(2X)$
 $= (5X)(2X) = 10X^2 \text{ units}^2$
 $P = (4X) + (2X+2) + (6X) + (2X+1)$
 $= 14X + 3 \text{ units}$

Lesson Practice 10A

1. isosceles
2. scalene
3. isosceles
4. right
5. acute
6. obtuse
7. yes
8. the angles would be 90° , 45° ,
and 45° .
9. no: $5+7 < 15$

10. yes: $8+9 > 11$
11. isosceles
12. equilateral
13. angles
14. acute
15. obtuse
16. scalene
17. right
18. Triangles will vary.
One angle must $= 90^\circ$.
19. Triangles will vary.
All angles must $< 90^\circ$.
20. Triangles will vary. Two angles
must have the same measure.

Lesson Practice 10B

1. equilateral
2. scalene
3. isosceles
4. obtuse
5. right
6. equiangular
7. no
8. In a right triangle, one angle is
 90° , and the other two must each
be $< 90^\circ$.
9. yes: $10+11 > 12$
10. yes: $2+6 > 7$
11. two
12. three
13. zero
14. 90
15. 90
16. must be less than $10+8 = 18$
17. obtuse
18. Triangles will vary. All three angles
must have different measures.
19. Triangles will vary. One angle
must be $> 90^\circ$.
20. Triangles will vary. Angles must
have the same measure of 60° .