18. $\frac{3}{4}(25.12) = (.75)(25.12) = 18.84$ in

19. V = Area of base times height =
$\frac{1}{2}(6.2)(9.1)(13) = 366.73$ in^3

20. triangles:
$A = (2)\frac{1}{2}bh = (2)\frac{1}{2}(6.2)(9.1)$
$= 56.42$ in^2
large rectangles:
$A = (2)(11)(13) = 286$ in^2
small rectangle:
$A = (6.2)(13) = 80.6$ in^2
total:
$A = 56.42 + 286 + 80.6$
$= 423.02$ in^2

Systematic Review 21E

1. $\frac{\sqrt{3}}{\sqrt{3}} = 1$
2. $1(2) = 2$
3. $\frac{16\sqrt{7}\sqrt{3}}{2} = \frac{16\sqrt{21}}{2} = \frac{8\sqrt{21}}{1} = 8\sqrt{21}$
4. $\frac{16\sqrt{7}}{2} = \frac{8\sqrt{7}}{1} = 8\sqrt{7}$
5. $8\sqrt{2}$
6. 8
7. $7\sqrt{2}\sqrt{2} = 7\sqrt{4} = 7(2) = 14$
8. $7\sqrt{2}$
9. $(3\sqrt{10})(7\sqrt{10}) = (3)(7)\sqrt{10}\sqrt{10} =$
$21\sqrt{100} = 21(10) = 210$
10. $5\sqrt{7} + 4\sqrt{3} = 5\sqrt{7} + 4\sqrt{3}$:
cannot be simplified
11. $\frac{10\sqrt{18}}{2\sqrt{6}} = \frac{10\sqrt{3}}{2} = \frac{5\sqrt{3}}{1} = 5\sqrt{3}$
12. $11^2 + L^2 = 22^2$
$121 + L^2 = 484$
$L^2 = 363$
$L = \sqrt{363} = \sqrt{121}\sqrt{3} = 11\sqrt{3}$ units
13. $A = \frac{1}{2}bh = \frac{1}{2}(11)(11\sqrt{3}) =$
$60.5\sqrt{3}$ units^2
14. one triangle:
$A = \frac{1}{2}bh = \frac{1}{2}(5\sqrt{11})(14) =$
$35\sqrt{11}$ in^2
six triangles:
$A = (6)(35\sqrt{11}) = 210\sqrt{11}$ in^2
15. $V = Bh = \pi r^2 h \approx (3.14)(6^2)(4) =$
452.16 ft^3
16. $(62)(452.16) = 28{,}033.92$ lbs
17. $28{,}033.92 \div 2{,}000 \approx 14.02$ tons
18. 45°–45°–90° triangle: $2Y\sqrt{2}$
19. using Pythagorean theorem:
$A^2 + (3A)^2 = H^2$
$A^2 + (3A)(3A) = H^2$
$A^2 + 9A^2 = H^2$
$10A^2 = H^2$
$\sqrt{10A^2} = H = \sqrt{A^2}\sqrt{10} = A\sqrt{10}$
20. $L^2 + B^2 = (B\sqrt{10})^2$
$L^2 + B^2 = (B\sqrt{10})(B\sqrt{10})$
$L^2 + B^2 = B^2\sqrt{100}$
$L^2 + B^2 = 10B^2$
$L^2 = 9B^2$
$L = \sqrt{9B^2} = \sqrt{9}\sqrt{B^2} = 3B$

Lesson Practice 22A

1. axiom; postulate
2. theorems
3. converses
4. congruent
5. bisector
6. congruent
7. congruent
8. 180°
9. parallel
10. 360°

11. If alternate interior angles are congruent, the two lines cut by a transversal are parallel.
12. If a quadrilateral has two pairs of parallel sides, it is a parallelogram.
13. In a triangle, if the leg squared plus the leg squared equals the hypotenuse squared, it is a right triangle.
14. If two perpendicular lines intersect, they form right angles.
15. A quadrilateral with only one pair of parallel sides is a trapezoid.
16. property of symmetry
17. reflexive property
18. transitive property

Lesson Practice 22B

1. assumes
2. proven
3. converse
4. isosceles
5. transversal; congruent
6. complementary
7. exterior
8. midpoint (or perpedicular bisector)
9. rectangle
10. square
11. The measures of supplementary angles add up to 180°.
12. A quadrilateral with two pairs of parallel sides is a parallelogram.
13. If alternate exterior angles are congruent, the lines cut by a transversal are parallel.
14. If two line segments are congruent, they are equal in length.
15. A polygon with two pairs of parallel sides and four congruent sides is a rhombus.
16. transitive property
17. property of symmetry
18. reflexive property

Systematic Review 22C

1. unproven
2. congruent
3. corresponding, alternate interior, and exterior angles are congruent.
4. $A + B > C$
5. interior angles
6. if A = B then B = A
7. $5\sqrt{6}\,(2) = 10\sqrt{6}$
8. $5\sqrt{6}\sqrt{3} = 5\sqrt{18} = 5\sqrt{9}\sqrt{2} = 5(3)\sqrt{2} = 15\sqrt{2}$
9. $\frac{13}{\sqrt{2}} = \frac{13\sqrt{2}}{\sqrt{2}\sqrt{2}} = \frac{13\sqrt{2}}{\sqrt{4}} = \frac{13\sqrt{2}}{2}$
10. $\frac{13\sqrt{2}}{2}$
11. $\frac{2\sqrt{3}}{\sqrt{5}} = \frac{2\sqrt{3}\sqrt{5}}{\sqrt{5}\sqrt{5}} = \frac{2\sqrt{15}}{\sqrt{25}} = \frac{2\sqrt{15}}{5}$
12. $L^2 + 13^2 = 17^2$
    $L^2 + 169 = 289$
    $L^2 = 120$
    $L = \sqrt{120} = \sqrt{4}\sqrt{30} = 2\sqrt{30}$
13. exterior angle $= 180° - 120° = 60°$
    $360° \div 60° = 6$ sides
14. circle: $C = 2\pi r \approx (2)(3.14)(10)$
    $= 62.8$ in
    sector is $\frac{150°}{360°} = \frac{5}{12}$ of circle:
    $\frac{5}{12}(62.8) \approx 26.17$ in
15. circle: $A = \pi r^2 \approx (3.14)(10^2)$
    $= 314$ in^2
    sector is $\frac{150°}{360°} = \frac{5}{12}$ of circle:
    $\frac{5}{12}(314) \approx 130.83$ in^2

16. one triangle:
$A = \frac{1}{2}bh = \frac{1}{2}\left(3\sqrt{13}\right)(10) = 15\sqrt{13}$
eight triangles:
$A = (8)\left(15\sqrt{13}\right) = 120\sqrt{13} \approx 432.67 \text{ in}^2$
17. $V = Bh = \pi r^2 h \approx (3.14)\left(7.5^2\right)(4)$
$= 706.5 \text{ ft}^3$
18. $(62)(706.5) = 43{,}803$ lbs
19. $43{,}803 \div 2{,}000 \approx 21.9$ tons
20. cone: $V = \frac{1}{3}Bh = \frac{1}{3}\pi r^2 h \approx$
$\frac{1}{3}(3.14)\left(14^2\right)(16.5) = 3{,}384.92 \text{ ft}^3$
cylinder: $V = Bh = \pi r^2 h \approx$
$(3.14)\left(14^2\right)(17) = 10{,}462.48 \text{ ft}^3$
total: $3{,}384.92 + 10{,}462.48 =$
$13{,}847.4 \text{ ft}^3$

Systematic Review 22D

1. proven
2. congruent
3. isosceles
4. square
5. 360°
6. A = A
7. $5(2) = 10$
8. $5\sqrt{3}$
9. $9\sqrt{2}$
10. 9
11. $H^2 = 12^2 + 16^2$
$H^2 = 144 + 256$
$H^2 = 400$
$H = \sqrt{400}$
$H = 20$ units
12. $A = \frac{1}{2}bh = \frac{1}{2}(12)(16) = 96 \text{ units}^2$
13. exterior angle $= 180° - 150° = 30°$
$360° \div 30° = 12$ sides
14. see drawing

15. one triangle:
$A = \frac{1}{2}bh = \frac{1}{2}\left(6\sqrt{13}\right)(25) = 75\sqrt{13}$
ten triangles:
$A = 10\left(75\sqrt{13}\right) = 750\sqrt{13} \approx$
$2{,}704.16 \text{ in}^2$
16. $V = Bh = \pi r^2 h \approx (3.14)\left(9^2\right)(4) =$
$1{,}017.36 \text{ ft}^3$
17. $(62)(1{,}017.36) = 63{,}076.32$ lbs
18. $63{,}076.32 \div 2{,}000 \approx 31.54$ tons
19. "roof":
$A = 2(12)(6.7) = 160.8 \text{ m}^2$
triangles:
$A = (2)\frac{1}{2}bh = (2)\frac{1}{2}(6)(6) = 36 \text{ m}^2$
sides:
$A = 2(6)(5) + 2(12)(5) = 180 \text{ m}^2$
bottom:
$A = (6)(12) = 72 \text{ m}^2$
total:
$A = 160.8 + 36 + 180 + 72 =$
448.8 m^2
20. prism: $V = Bh = \frac{1}{2}(6)(6)(12) =$
216 m^3
rectangular solid:
$V = (6)(12)(5) = 360 \text{ m}^3$
total: $V = 216 + 360 = 576 \text{ m}^3$

Systematic Review 22E

1. rectangle
2. right angle
3. rhombus
4. supplementary
5. equal measures

6. If A = B and B = C then A = C
7. $\frac{16}{2} = 8$
8. $8\sqrt{3}$
9. $9\sqrt{2}$
10. 9
11. $\frac{\sqrt{6}}{4\sqrt{8}} = \frac{\sqrt{6}\sqrt{2}}{4\sqrt{8}\sqrt{2}} = \frac{\sqrt{12}}{4\sqrt{16}} = \frac{\sqrt{4}\sqrt{3}}{4(4)} = \frac{2\sqrt{3}}{16} = \frac{\sqrt{3}}{8}$
12. $48^2 + L^2 = 50^2$
    $2{,}304 + L^2 = 2{,}500$
    $L^2 = 196$
    $L = \sqrt{196} = 14$ units
13. circle:
    $C = 2\pi r \approx (2)(3.14)(6) = 37.68$ in
    sector is $\frac{360°}{360°}$ = whole circle
    $C = 1(37.68) = 37.68$ in
14. circle:
    $A = \pi r^2 \approx (3.14)(6^2) = 113.04$ in^2
    sector: $1(113.04) = 113.04$ in^2
15. one triangle:
    $A = \frac{1}{2}bh = \frac{1}{2}(8\sqrt{10})(22) = 88\sqrt{10}$ in^2
    five triangles:
    $A = (5)(88\sqrt{10}) = 440\sqrt{10} \approx 1{,}391.40$ in^2
16. $V = Bh = \pi r^2 h \approx (3.14)(12^2)(4) = 1{,}808.64$ ft^3
17. $(62)(1{,}808.64) = 112{,}135.68$ lbs
    $112{,}135.68 \div 2{,}000 \approx 56.07$ tons
18. $X^4 - 81 =$
    $(X^2 - 9)(X^2 + 9) =$
    $(X - 3)(X + 3)(X^2 + 9)$
19. $X^3 - 9X =$
    $(X)(X^2 - 9) =$
    $(X)(X - 3)(X + 3)$
20. $X^4 - 25X^2 =$
    $(X^2)(X^2 - 25) =$
    $(X^2)(X - 5)(X + 5)$

Lesson Practice 23A

1. ∠D
2. △DFE
3. △DEF
4. ∠A
5. $\overline{AC}$
6. $\overline{DF}$
7. ∠XTY
8. ∠RST
9. $\overline{YT}$
10. $\overline{TR}$
11. △YTX
12. $\overline{XT}$
13. correspond
14. exterior
15. remote interior
16. $180° - 120° = 60°$
17. $180° - 89° = 91°$
18. $m\angle D = m\angle B + m\angle C$
    $60° + 91° = 151°$
    (remote interior angles)

Lesson Practice 23B

1. $\overline{BD}$
2. $\overline{BF}$
3. △BDF
4. ∠C
5. ∠AEC
6. $\overline{AC}$
7. $\overline{BC}$
8. $\overline{CE}$
9. △BCA
10. ∠B

11. $\angle E$
12. $\overline{DE}$
13. 180
14. exterior
15. B, C
16. $180° - 84° = 96°$
17. $180° - 132° = 48°$
18. $m\angle D = m\angle B + m\angle C$
    $96° + 48° = 144°$
    (remote interior angles)

Systematic Review 23C

1. $\overline{LM}$
2. $\overline{JG}$
3. $\triangle JHG$
4. $\angle MKL$
5. $\angle LMK$
6. $180° - 123° = 57°$
7. $180° - 110° = 70°$
8. $m\angle A = 180° - (m\angle B + m\angle C)$
   $m\angle A = 180° - (57° + 70°)$
   $m\angle A = 180° - 127° = 53°$
9. $30°-60°-90°$ triangle
   hypotenuse = short leg $\times 2$
   $5 \times 2 = 10$
10. $30°-60°-90°$ triangle
    long leg = short leg $\times \sqrt{3}$
    $5 \times \sqrt{3} = 5\sqrt{3}$
11. parallel sides
12. regular
13. complementary angles
14. parallelogram
15. leg squared; leg squared
16. Exterior angles of a polygon add up to 360°. If each has a measure of 120°, there must be $360° \div 120$, or 3 sides. Triangle
17. $V = \frac{4}{3}\pi r^3 \approx \frac{4}{3}(3.14)(4.3)^3 =$
    $\frac{4}{3}(3.14)(79.507) \approx 332.87 \text{ cm}^3$
18. $SA = 4\pi r^2 \approx 4(3.14)(4.3)^2 =$
    $4(3.14)(18.49) \approx 232.23 \text{ cm}^2$
19. area of circle with r = 4:
    $A = \pi r^2 \approx (3.14)(4)^2 =$
    $(3.14)(16) = 50.24 \text{ ft}^2$
    45° is $\frac{1}{8}$ of 360°,
    so area of arc =
    $\frac{1}{8}$ of $50.24 \text{ ft}^2 =$
    $50.24 \div 8 = 6.28 \text{ ft}^2$
    $V = Bh$ (area of base times height)
    $V = 6.28(5.2) \approx 32.66 \text{ ft}^3$
20. $32.66 \text{ ft}^3 (62 \text{ lbs} / \text{ft}^3) =$
    2,024.92 lbs
    (using rounded answer from #19)

Systematic Review 23D

1. $\overline{ZA}$
2. $\overline{YX}$
3. $\angle XAZ$
4. $\triangle ZAX$
5. $\triangle AXZ$
6. $m\angle C = 180° - (52° + 59°)$
   $m\angle C = 180° - 111° = 69°$
7. $m\angle X = 180° - m\angle C$
   $m\angle X = 180° - 69° = 111°$
8. $m\angle Y = m\angle C + 52°$
   (remote interior angles)
   $m\angle Y = 69° + 52° = 121°$
9. $A^2 + 48^2 = 50^2$
   $A^2 + 2{,}304 = 2{,}500$
   $A^2 = 196$
   $A = 14$ units

10. $10^2+11^2=B^2$
$100+121=B^2$
$221=B^2$
$B=\sqrt{221}$ units
11. parallelogram
12. perpendicular
13. congruent
14. 180°
15. congruent
16. exterior angles add up to 360°; 360 ÷ 60 = 6 sides; hexagon
17. $A=\frac{\text{major}}{2}\times\frac{\text{minor}}{2}(\pi)\approx$
$\frac{10}{2}\times\frac{15}{2}(3.14)=$
$(5)(7.5)(3.14)=117.75\ m^2$
18. change 42 inches to feet:
$42\div12=3.5$ ft
$V=\frac{1}{3}Bh=\frac{1}{3}\pi r^2h\approx$
$\frac{1}{3}(3.14)(3.5)^2(15)=$
$\frac{1}{3}(3.14)(12.25)(15)\approx192.33\ ft^3$
19. $60°=\frac{1}{6}$ of 360° so area of base will be $\frac{1}{6}$ that of the whole circle.
$A=\pi r^2\approx(3.14)(7)^2=$
$(3.14)(49)=153.86\ ft^2$
$153.86\div6\approx25.643\ ft^2$
$V=Bh=25.643\times2\approx51.29\ ft^3$
20. $51.29\ ft^3(62\ lbs/ft^3)=3{,}179.98$ lb (using rounded answer from #19)

Systematic Review 23E

1. $\overline{VT}$
2. ∠QTV
3. ∠TVQ
4. △TSW
5. △SWT
6. $m\angle A=180°-(62°+67°)=$
$180°-(129°)=51°$
7. $m\angle X=180°-67°=113°$
8. $m\angle Y=180°-62°=118°$
9. $A^2+34^2=36^2$
$A^2+1{,}156=1{,}296$
$A^2=140$
$A=\sqrt{140}$
$A=\sqrt{4}\sqrt{35}=2\sqrt{35}$
10. $10^2+10^2=B^2$
$100+100=B^2$
$200=B^2$
$B=\sqrt{200}$
$B=\sqrt{100}\sqrt{2}=10\sqrt{2}$
11. vertex
12. $\frac{1}{2}$
13. alternate; congruent
14. 180°
15. >; The sum of the lengths of the two shorter sides of a triangle must be greater than the length of the long side.
16. Octogon has 8 sides. Each exterior angle must have a measure of 360° ÷ 8, or 45°, so each interior angle must have a measure of 180° – 45° = 135°.
17. .33 ft × 12 = 3.96 in
$V=Bh=\frac{1}{3}\pi r^2h\approx$
$\frac{1}{3}(3.14)(3.96)^2(7)\approx114.89\ in^3$
18. $X^2+6X+8=0$
$(X+4)(X+2)=0$
$X+4=0$ $\quad$ $X+2=0$
$X=-4$ $\quad$ $X=-2$

19. $x^2 + 5x = -6$

$x^2 + 5x + 6 = 0$

$(x+3)(x+2) = 0$

$x + 3 = 0$ $\quad x + 2 = 0$

$x = -3$ $\quad x = -2$

20. $x^2 - 3x + 2 = 30$

$x^2 - 3x - 28 = 0$

$(x-7)(x+4) = 0$ $\quad x + 4 = 0$

$x - 7 = 0$ $\quad x = -4$

Lesson Practice 24A

Please note: In some cases, the student will be able to do the proof in a slightly different way from the way given in the answer key. Order of statements is not important except where one statement depends upon another, in which case the supporting statement will need to be made first.

1. given
2. definition of a square
3. reflexive property
4. SSS postulate
5. given
6. given
7. transversal; congruent
8. SAS postulate
9. $\overline{AB}$; $\overline{CB}$ order of 9 and 10 may be reversed
10. $\overline{AD}$; $\overline{CD}$
11. $\overline{BD}$; $\overline{BD}$
12. $\triangle ABD$; $\triangle CBD$
13. given
14. given
15. ABCD is a rhombus
16. $\overline{AD} \cong \overline{CB}$ (order of 16 and 17 may be reversed)
17. $\overline{AB} \cong \overline{CD}$
18. $\overline{BD} \cong \overline{BD}$
19. $\triangle ABD \cong \triangle CDB$

Lesson Practice 24B

1. given
2. given
3. $\overline{BD} \cong \overline{BD}$
4. definition of bisector
5. given
6. definition of a rectangle
7. interior angles
8. reflexive
9. SAS
10. given
11. definition of perpendicular
12. right angles are congruent
13. given
14. definition of midpoint
15. reflexive property
16. SAS postulate
17. given
18. given
19. $\overline{EC} \cong \overline{BC}$ (19 and 20 may be reversed)
20. $\overline{AC} \cong \overline{DC}$
21. $\triangle ABC \cong \triangle DEC$

Systematic Review 24C

1. definition of square
2. definition of square
3. reflexive property
4. $\triangle SQU \cong \triangle URS$
5. yes: The diagonal of the square is a transversal across the parallel sides of the square, making the angles named alternate interior angles.
6. 126°
7. 65°
8. 54°
9. 61°
10. GFE
11. $\overline{FE}$

12. The length of the hypotenuse of a $45°-45°-90°$ triangle is equal to $\sqrt{2}$ times a leg of the triangle.
$3\sqrt{2}\left(\sqrt{2}\right) = 3\left(\sqrt{4}\right) = 3(2) = 6$
13. $3\sqrt{2}$ The legs of a $45°-45°-90°$ triangle are congruent to one another.
14. The length of the hypotenuse of a $30°-60°-90°$ triangle is equal to 2 times the short leg of the triangle.
$2\sqrt{3}\,(2) = 4\sqrt{3}$
15. The length of the long leg of a $30°-60°-90°$ triangle is equal to $\sqrt{3}$ times the short leg of the triangle.
$2\sqrt{3}\left(\sqrt{3}\right) = 2\left(\sqrt{9}\right) = 2(3) = 6$
16. trapezoid
17. $180°$
18. 2
19. Volume of cylinder :
$V = Bh = \pi r^2 h \approx (3.14)(4)^2(8) =$
$401.92\ ft^3$
Section is $\frac{90°}{360°} = \frac{1}{4}$ of the cylinder
$\frac{1}{4} \times 401.92 = 100.48\ ft^3$
20. $100.48\ ft^3 \times \frac{62\ lb}{ft^3} = 6{,}229.76\ lb$

Systematic Review 24D

1. definition of isosceles triangle
2. definition of bisector
3. reflexive property
4. $\triangle CDM \cong \triangle CFM$
5. yes; corresponding angles are congruent
6. $69°$
7. $111°$
8. $\angle DGE$
9. $\overline{GE}$
10. divide hypotenuse by $\sqrt{2}$:
$\frac{4}{\sqrt{2}} = \frac{4\sqrt{2}}{\sqrt{2}\sqrt{2}} = \frac{4\sqrt{2}}{\sqrt{4}} = \frac{4\sqrt{2}}{2} = 2\sqrt{2}$
11. same as A, so $2\sqrt{2}$
12. $A = \frac{1}{2}bh = \frac{1}{2}(4)(9) = 18\ in^2$
13. First, find hypotenuse:
$9^2 + 4^2 = H^2$
$81 + 16 = H^2$
$96 = H^2$
$H = \sqrt{96} \approx 9.8$
P = sum of sides =
$4 + 9 + 9.8 = 22.8$ in
14. $leg^2 + leg^2 = hypotenuse^2$
or $A^2 + B^2 = C^2$
15. postulates
16. congruent
17. isosceles
18. square
19. Volume of cylinder:
$V = Bh = \pi r^2 h \approx (3.14)(10)^2(12) =$
$3{,}768\ ft^3$
Section is $\frac{120°}{360°} = \frac{1}{3}$ of the cylinder
$\frac{1}{3} \times 3{,}768\ ft^3 = 1{,}256\ ft^3$
20. $1{,}256\ ft^3 \times \frac{62\ lb}{ft^3} = 77{,}872\ lb$

Systematic Review 24E

1. $\overline{RH} \cong \overline{SB}$ 1 and 2 may be reversed
2. $\overline{RB} \cong \overline{SH}$
3. $\overline{BH} \cong \overline{BH}$
4. SSS postulate
5. yes; corresponding angles are congruent

6. $51°$
7. $113°$
8. TWV
9. $\overline{VT}$
10. $10^2 + LL^2 = 20^2$
    $100 + LL^2 = 400$
    $LL^2 = 300$
    $LL = \sqrt{300}$
    $LL = \sqrt{100}\sqrt{3} = 10\sqrt{3}$
11. This triangle's sides follow the pattern of $30° - 60° - 90°$ triangles, so $\angle a = 60°$
12. This triangle's sides follow the pattern of $30° - 60° - 90°$ triangles, so $\angle b = 30°$
13. $A = \frac{1}{2}bh = \frac{1}{2}(10)(10\sqrt{3}) = 50\sqrt{3}$
    ≈ 86.60 square units
14. $P = 20 + 10 + 10\sqrt{3} = 30 + 10\sqrt{3}$
    ≈ 47.32 units
15. Exterior angles must add to $360°$. Since there 10, each exterior angle must have a measure of $\frac{360°}{10}$ or $36°$. Each interior angle, therefore will have a measure of $180° - 36° = 144°$.
16. Arc BAC has a measure of $264°$, so arc BC has a measure of $360° - 264° = 96°$. The measure of the inscribed angle is half the measure of the arc,
    so $m\angle BAC = \frac{1}{2} x 96° = 48°$
17. $\frac{3}{\sqrt{5}} + \frac{7}{\sqrt{2}} = \frac{3\sqrt{5}}{\sqrt{5}\sqrt{5}} + \frac{7\sqrt{2}}{\sqrt{2}\sqrt{2}} =$
    $\frac{3\sqrt{5}}{\sqrt{25}} + \frac{7\sqrt{2}}{\sqrt{4}} = \frac{3\sqrt{5}}{5} + \frac{7\sqrt{2}}{2} =$
    $\frac{(2)3\sqrt{5}}{(2)5} + \frac{(5)7\sqrt{2}}{(5)2} = \frac{6\sqrt{5} + 35\sqrt{2}}{10}$
18. $1{,}450{,}000 = 1.45 \times 10^6$
19. $.0076 = 7.6 \times 10^{-3}$
20. $640{,}000{,}000{,}000 = 6.4 \times 10^{11}$

Lesson Practice 25A

1. given
2. $\angle BAD \cong \angle BCD$
3. given
4. $\overline{DB}$ bisects $\angle ABC$
5. definition of bisector
6. $\triangle ABD \cong \triangle CBD$
7. ASA
8. yes: given; also, CPCTRC
9. $\angle ABD \cong \angle ACD$
10. given
11. $\overline{AD}$ bisects $\angle BAC$
12. definition of bisector
13. $\overline{AD} \cong \overline{AD}$
14. $\triangle ADB \cong \triangle ADC$
15. AAS
16. yes: CPCTRC
17. $\overline{BD}$ bisects $\angle ABC$ and $\angle ADC$
18. $\angle ABD \cong \angle CBD$
    (18 and 19 may be reversed)
19. $\angle ADB \cong \angle CDB$
20. $\overline{BD} \cong \overline{BD}$
21. $\triangle BAD \cong \triangle BCD$
22. $\angle BAD \cong \angle BCD$
23. E is the midpoint of $\overline{FG}$
24. $\overline{EF} \cong \overline{EG}$
25. definition of midpoint
26. $\overline{DG} \parallel \overline{HF}$
27. $\angle DGE \cong \angle HFE$
28. $\angle DEG \cong \angle HEF$
29. $\triangle DEG \cong \triangle HEF$
30. $\angle GDE \cong \angle FHE$

Lesson Practice 25B

1. given
2. $\overline{AB} \cong \overline{CD}$