4. All angles should be less than 90°; no angles or sides should have the same measure.

5. no

6. By definition, all angles in an acute triangle are less than 90°.

7. $A = \frac{1}{2}(6)(18.4) = 55.2 \text{ ft}^2$

8. $A = (7.7)(4.9) = 37.73 \text{ m}^2$

9. $P = 12 + 10 + 18.4 = 40.4 \text{ ft}$

10. $P = 7.7 + 5.3 + 7.7 + 5.3 = 26 \text{ m}$

11. $\perp$; $\angle ACD$ is marked as a right angle

12. bisects; $m\angle 1 = m\angle 2$

13. ACB and ACD, or 1 and 2

14. C is the midpoint of $\overline{BD}$.

15. $A = (11)(11) - (7)(7) =$
    $121 - 49 = 72 \text{ in}^2$

16. $P = 11 + 11 + 11 + 11 = 44 \text{ in}$

For numbers 17-20,
the last term may vary.

17. $Y = -\frac{1}{2}X - 1$ *Pare*

18. $Y = 3X + 5$

19. $Y = -2X$

20. $Y = 4X + 3$

Lesson Practice 11A

1. c
2. d
3. b
4. e
5. f
6. a
7. 5
8. 6
9. $180° \times 6 = 1,080°$
10. $1,080° \div 8 = 135°$
11. $180° - 135° = 45°$

12. $45° \times 8 = 360°$

13. $(N - 2)(180°)$

14. dodecagon;
    $360° \text{ total} \div 30° = 12 \text{ sides}$

15. $8 + 2 = 10$; decagon

16. $(N - 2)(180°) \Rightarrow ((15) - 2)(180°) =$
    $13(180°) = 2,340°$

17. $2,340° \div 15 = 156°$

18. $360° \div 15 = 24°$
    for each exterior angle;
    $180° - 24° = 156°$
    for each interior angle

Lesson Practice 11B

1. b
2. d
3. a
4. f
5. e
6. c
7. 2
8. 3
9. $180° \times 3 = 540°$
10. $540° \div 5 = 108°$
11. $180° - 108° = 72°$
12. $72° \times 5 = 360°$
13. $(N - 2) \times 180°$
14. decagon : $360° \div 36° = 10 \text{ sides}$
15. Six triangles would mean 8 sides, so it would be an octagon.

16. $(N - 2) \times 180° \Rightarrow ((3) - 2) \times 180° =$
    $(1) \times 180° =$
    $180°$

17. $180° \div 3 = 60°$

18. Exterior angles add up to 360°:
    $360° \div 3 = 120°$
    for each exterior angle.
    Interior angles
    are $180° - 120° = 60°$.

Systematic Review 11C

1. 3
2. 4
3. $180° \times 4 = 720°$
4. $720° \div 6 = 120°$
5. $180° - 120° = 60°$
6. $60° \times 6 = 360°$
7. square: Exterior angles add up to 360°.
$360° \div 90° = 4$ sides
8. five sides, so it would be a pentagon
9. $(N-2)180° \Rightarrow ((12)-2)180°$
$= (10)180° = 1,800°$
10. $1,800° \div 12 = 150°$
check: $360° \div 12 = 30°$
for each exterior angle.
$180° - 30° = 150°$
for each interior angle.
11. 60°: $\angle ACB$ is supplementary to $\angle ACD$, which has a measure of 90°, so $\angle ACB$ must also have a measure of 90°. $\angle ACB$, $\angle ABC$ and $\angle BAC$ must add up to 180°, so $m\angle ABC = 180° - (30° + 90°) = 60°$.
12. ABC : The angles add up to 90°.
13. $\angle ADC = 60°$, using reasoning similar to that used in question number 11. Since $\angle ADC$ and $\angle ADE$ are supplementary, $m\angle ADE = 180° - m\angle ADC = 120°$.
14. supplementary
15. equilateral
16. right
17. yes
18. yes: $9 + 8 > 15$
19. $A =$
$(1.2)(1.1) + (1.4)(2.2) + (1.1)(3.4) + (1.2)(4.2) =$
$1.32 + 3.08 + 3.74 + 5.04 = 13.18 \text{ m}^2$
20. $P =$
$(1.2 + .8 + 1.1 + 1.2 + 1.4 + 1.1 + 1.2 + 1.1) \times 2 =$
$9.1 \times 2 = 18.2 \text{ m}$

Systematic Review 11D

1. 4
2. 5
3. $180° \times 5 = 900°$
4. $900° \div 7 \approx 128.57°$
5. $180° - 128.57° = 51.43°$
6. $51.43° \times 7 = 360.01°$
The .01° is due to rounding in a previous step.
7. hexagon: $360° \div 60° = 6$ sides
8. hexagon
9. $(N-2)180° \Rightarrow ((9)-2)180° =$
$(7)180° = 1,260°$
10. $1,260° \div 9 = 140°$
check:
Exterior angles add up to 360°.
$360° \div 9 = 40°$
for each exterior angle.
$180° - 40° = 140°$
for each interior angle
11. GHK or FHJ
12. JHK
13. yes : They are alternate interior angles. It may help to extend $\overrightarrow{JG}$.
14. yes: They are alternate interior angles. It may help to extend $\overrightarrow{FK}$.
15. isosceles
16. scalene
17. no: $1 + 1 = 2$, and the two short sides need to add up to something greater than the long side.
18. $A = bh$
19. check with a protractor: angle should measure 125°
20. check with a protractor: new angles should both measure 62.5°

Systematic Review 11E

1. 7
2. 8

3. $180° \times 8 = 1{,}440°$

4. $1{,}440 \div 10 = 144°$

5. $180° - 144° = 36°$

6. $36° \times 10 = 360°$

7. triangle: $360° \div 120° = 3$ sides

8. octagon

9. $(N-2)180° \Rightarrow ((20)-2)180° =$ $(18)180° = 3{,}240°$

10. $3{,}240° \div 20 = 162°$
    check: $360° \div 20 = 18°$
    $180° - 18° = 162°$

11. $85°$: vertical angles

12. $180° - 85° = 95°$:
    supplementary angles

13. $m\angle JFK = 180° - (85° + 45°) =$
    $180° - 130° = 50°$

14. $m\angle GJK = 90° - m\angle FJG =$
    $90° - 45° = 45°$
    The measure of $\angle\alpha$ is
    unnecessary for solving
    this question.

15. A = average base × height
    $A = \dfrac{10+17}{2} \times 6 = \dfrac{27}{2} \times \dfrac{6}{1} = \dfrac{162}{2}$
    $= 81 \text{ m}^2$

16. $P = 6+10+11+17 = 44$ m

17. $Y = X - 1$
    $-X + Y = -1$ or
    (multiplying both sides by -1)
    $X - Y = 1$

18. $2X + Y + 4 = 0$
    $Y + 4 = -2X$
    $Y = -2X - 4$

19. $Y = 4X + 2$
    $-4X + Y = 2$ or
    $4X - Y = -2$

20. $X + 2Y - 8 = 0$
 $2Y - 8 = -X$
    $2Y = -X + 8$
    $Y = -\dfrac{1}{2}X + 4$

Lesson Practice 12A

1. sphere
2. circumference
3. chord
4. radius
5. diameter
6. $\overline{GE}, \overline{GC}, \overline{GA},$ or $\overline{GD}$
7. sector
8. arc
9. tangent
10. ellipse
11. perpendicular
12. secant
13. $360° - 60° = 300°$
14. 4
15. $86°$: The measure of an intercepted arc is the same as the measure of the central angle that intercepts it.
16. $86° \div 2 = 43°$: The measure of an inscribed angle is half the measure of a central angle intercepting the same arc.
17. $100°$: Answers that are close are acceptable.
18. $100°$: Answers that are close are acceptable, but the answers to 17 and 18 must be the same.
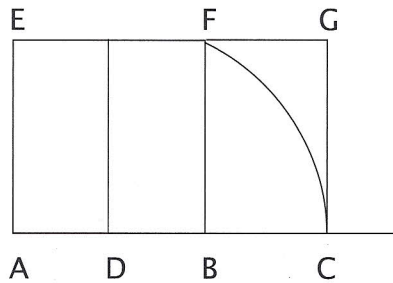
Lesson Practice 12B

1. circumference
2. chord
3. sphere
4. radius
5. radius
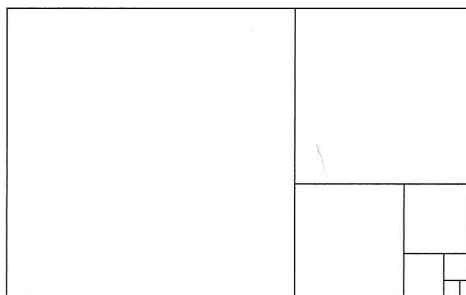6. diameter
7. tangent
8. arc
9. sector
10. two
11. one

figure 4

na [rectangle]

nb

figure 5

x
y

2x
2y

figure 6

x^2

x
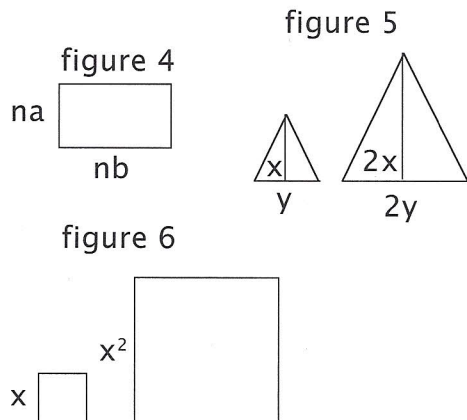
Honors Lesson 10

1-4.

E   F   G

A   D   B   C

5. your answer should be close to 0.61803.

6. See illustration above.
   The ratio should be close to what you got in #5.

7-8.

Honors Lesson 11

1.

	green, buttons	green, zipper	red, zipper	blue, buttons
Chris	yes	x	x	x
Douglas	x	yes	x	x
Ashley	x	x	x	yes
Naomi	x	x	yes	x

2.

	planning games	refresh- ments	place for party	birthday guest
Sam	x	x	yes	x
Jason	x	x	x	yes
Shane	yes	x	x	x
Troy	x	yes	x	x

3.

	train	boat	airplane	car
Janelle	yes	x	x	x
Walter	x	x	x	yes
Julie	x	yes	x	x
Jared	x	x	yes	x

4.

	hot dog	pizza	chicken soup	tossed salad
Molly	yes	x	x	x
Tina	x	x	x	yes
Logan	x	x	yes	x
Sam	x	yes	x	x

5. Answers will vary.

Honors Lesson 12

1.