4. If $m\angle 1 = 90°$, then $m\angle SRV = 90°$ since they are supplementary. $\angle SRV$ is made up of the three smaller angles in the problem, so the sum of their measures is equal to that of $\angle SRV$.
5. obtuse
6. yes: Both are 90°, so they add up to 180°.
7. no: Complementary angles add up to 90°.
8. yes
9. If $\angle$'s 2, 3 and 4 are congruent, and add up to 90°, the measure of each must be $\frac{90°}{3}$ or 30°.
   Since $\angle 8$ and $\angle 4$ are vertical angles, they are congruent, so $m\angle 8 = 30°$.
10. 2: vertical angles
11. acute
12. $m\angle 2 + m\angle 3 + m\angle 4 = 90°$
    $m\angle 3 = 90° - (25° + 35°)$
    $m\angle 3 = 90° - 60° = 30°$
13. $m\angle YRX = m\angle 3$: vertical angles
    $m\angle YRX = 30°$ (see #12)
14. ray RQ
15. Use your ruler to check that the resulting line segments are equal in length.
16. Use your protractor to check that the resulting angles are equal in measure.
17. $(-7)^2 = (-7)(-7) = 49$
18. $-(15)^2 = -(15)(15) = -225$
19. $-12^2 = -(12)(12) = -144$
20. $-(9)^2 = -(9)(9) = -81$

Lesson Practice 7A

1. transversal
2. exterior
3. interior
4. congruent
5. alternate
6. parallel
7. same
8. congruent
9. 60°: vertical angles
10. 60°: corresponding angles
11. $\angle 1$ and $\angle 2$ are supplementary, so $m\angle 2 = 180° - m\angle 1 = 180° - 70° = 110°$. $\angle 2$ and $\angle 6$ are corresponding angles, so they are congruent. Thus, $m\angle 6 = 110°$.
12. 70°: corresponding angles
13. 120°: corresponding angles
14. 120°: vertical angles
15. yes: Since $\angle 1$ and $\angle 5$ are corresponding angles, they have the same measure. $\angle$'s 5 and 17 are supplementary, so angles 1 and 17 are also.
16. yes
17. no: They are alternate interior angles.
18. no: They are supplementary angles and add up to 180°. If they were congruent, they would both be 90°.
19. yes: corresponding angles (It may help to ignore line MP.)
20. yes: Angles 12 and 13 are alternate exterior angles. (It may help to ignore lines LR and MP.)

Lesson Practice 7B

1. false
2. true
3. true
4. false: They are always congruent.
5. false: Two parallel lines are cut by a transversal.
6. true

7. true
8. true
9. 110°: alternate interior angles
10. 110°: corresponding angles
11. 85°: corresponding angles
12. 80°: corresponding angles
13. 80°: alternate exterior angles
14. 85°: vertical angles
15. yes: They add up to 180°.
16. yes (It may help to ignore line EF.)
17. no: They are supplementary angles.
18. yes: corresponding angles
19. no: They are corresponding angles, but it is not stated that line AE || line BF.
20. Since they are corresponding angles, if they are congruent, then line AE || line BF.

Systematic Review 7C

1. ∠3; ∠4; ∠5; ∠6
2. ∠1; ∠2; ∠7; ∠8
3. ∠3 and ∠6; ∠5 and ∠4
4. ∠1 and ∠8; ∠2 and ∠7
5. ∠1 and ∠5; ∠3 and ∠7; ∠2 and ∠6; ∠4 and ∠8
6. ∠1
7. 115°
8. They are alternate exterior angles.
9. 115°
10. They are corresponding angles.
11. false: They are supplementary.
12. false: They do not lie on the same line.
13. true
14. true: They are alternate interior angles.
15. The two lines crossed by a transversal are parallel.
16. They are perpendicular.
17. infinite
18. acute
19. obtuse
20. reflex

Systematic Review 7D

1. || or is parallel to
2. 7
3. 3
4. 4
5. 110°: They are supplementary.
6. supplementary
7. vertical
8. if m∠7 = 72°, then m∠8 = 180°–72° = 108°
   if m∠8 = 108°, then m∠6 = 108°: corresponding angles
   (Other reasons why may also be correct.)
9. 110°
10. They are alternate exterior angles.
11. true
12. false: It is stated that line RS is not parallel to line VT.
13. true
14. true: vertical angles
15. Corresponding angles are congruent.
16. Their measures add up to 180°.
17. complementary
18. adjacent
19. beta
20. delta

Systematic Review 7E

1. ∠1 and ∠3 are corresponding angles.
   ∠3 and ∠11 are corresponding angles.
   ∠1 ≅ ∠11 so m∠11=100°
2. 100°: They are alternate exterior angles.
3. 80°: ∠1 corresponds to ∠3, ∠3 and ∠4 are supplementary angles.
4. 80°: They are supplementary angles.
5. 13
6. yes

7. yes: $\angle 7$ and $\angle 2$ are alternate interior angles. $\angle 2$ and $\angle 10$ are corresponding angles.
8. no
9. true
10. true: $\angle 1$ and $\angle 14$ are alternate exterior angles. $\angle 14$ and $\angle 16$ are corresponding angles.
11. false
12. true: Parallel lines do not intersect.
13. The two lines cut by a transversal are parallel.
14. They lie on the same plane.
15. gamma
16. alpha
17. $\frac{1}{-1} = -1$
18. $\frac{3}{1} = 3$
19. $\frac{1}{-2} = -\frac{1}{2}$
20. $\frac{1}{1} = 1$

Lesson Practice 8A

1. square (or rectangle)
2. rectangle
3. triangle
4. rhombus (or quadrilateral)
5. trapezoid
6. parallelogram (or quadrilateral)
7. $P = 4+4+4+4 = 16$ m
8. $P = 8+6+8+6 = 28$ in
9. $P = 6.1+5.5+4.9 = 16.5$ ft
10. $P = 10+10+10+10 = 40$ cm
11. $P = 3+6.5+7+8 = 24.5$ in
12. $P = 15+23+15+23 = 76$ mm
13. true
14. true
15. false: They add up to 360°.
16. true
17. false: A right angle is possible but not necessary.
18. true
19. false: It has 2 pairs of parallel sides.
20. true

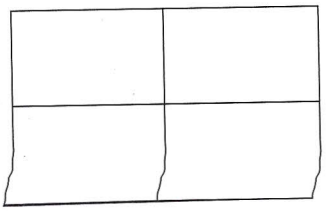
Lesson Practice 8B

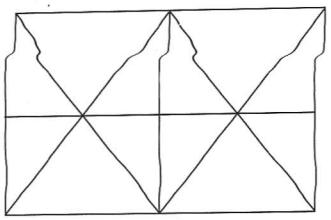
1. triangle
2. parallelogram
3. square
4. trapezoid
5. rhombus
6. rectangle
7. $P = 3+3+3+3 = 12$ m
8. $P = 11+8+11+8 = 38$ in
9. $P = 3.9+5.0+5.3 = 14.2$ ft
10. $P = 18+32+45+23 = 118$ in
11. length of unlabeled horizontal side: $4-2 = 2$ m
    length of unlabeled vertical side: $6-4 = 2$ m
    $P = 4+4+2+2+2+6 = 20$ m
12. length of top horizontal side: $40-12-12 = 16$ in
    $P = 16+12+12+16+40+16+12+12 = 136$ in
13. triangle
14. quadrilateral
15. square
16. rhombus
17. triangle
18. quadrilateral
19. trapezoid
20. parallelogram

Systematic Review 8C

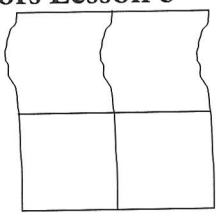
1. b
2. a
3. f

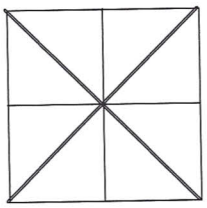
4. 1 started with
   2 that are half of first triangle
   6 small
   7 overlapping
   16 total
   (you may need to draw these separately to be able to count each one. See Above.)

5. 

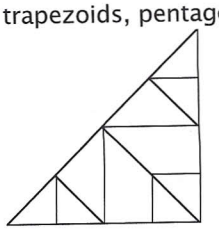
6. 

Honors Lesson 6

1. 

2. 

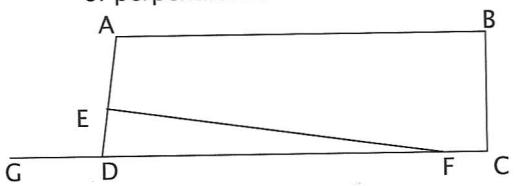
3. triangles, squares, trapezoids, pentagons



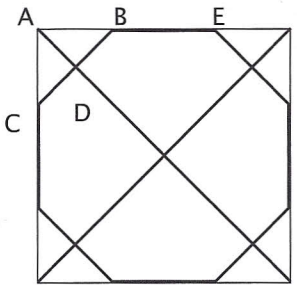
4. answers will vary
5. $P = 6X + .5(6)X$
   $P = 6X + 3X$
   $P = 9X$
6. $P = 9X$
   $P = 9(8)$
   $P = \$72$

Honors Lesson 7

1. Extend all segments
   $\overline{AD} \parallel \overline{XY} \parallel \overline{BC}$
   $\overline{AB} \parallel \overline{RS} \parallel \overline{DC}$
   corresponding angles are congruent
2. Yes; extend $\overline{DF}$ and $\overline{BC}$ these 2 line segements are *cut by transversal $\overline{AB}$*
   corresponding ∠'s ADF and ABE are both 90°
3. extend $\overline{DC}$ to include point G
   $m\angle A = 100°$
   since $\overline{AB}$ and $\overline{DE}$ are parallel,
   $m\angle GDA$ is 100°.
   $m\angle EDF$ is 80°, since it is supplementary to $\angle GDA$.
   $m\angle DEF = 90°$ - definition of perpendicular



4. CAB = 90° (given)
BAD = 45° – definition of bisector
ADB = 90° - definition of perpendicular
ABD = 45° - from information given
DBE = 135° - supplementary angles
all other corners work out the same way.



Honors Lesson 8

1. Look at the drawing below to see how the angles are labeled for easy reference.
a and d are 25°
definition of bisector

p and o are 20°
definition of bisector

i and j are 45°
definition of bisector

Now look at triangle AEB. Its angles must add up to 180°. We know the measure of a and that of ABC. Add these together, and subtract the result from the total 180° that are in a triangle:
$180-(25+90) = 180-115 = 65°$
$l = 65°$

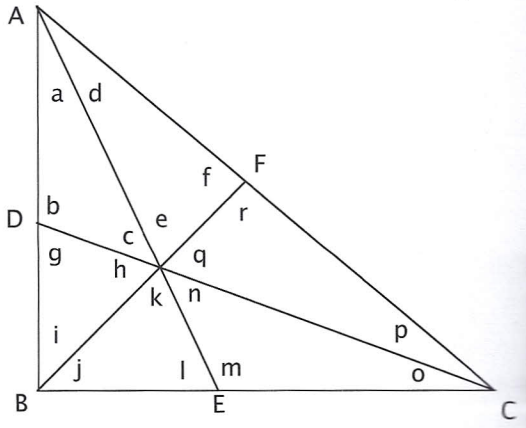
Using similar reasoning, and looking at triangles AEC, BFC, ABF, DBC and ADC, we can find the following:
m=115°

r = 95°	f = 85°
b = 110°	g = 70°

Now we know two angles from each of the smaller triangles. Armed with this knowledge, and the fact that there are 180° in a triangle, we can find the remaining angles:

c=45°	e = 70°
q = 65°	n = 45°
k = 70°	h = 65°

You can also use what you know about vertical angles and complementary angles to find some of the angles.



2. b, d, j and k are all 90° — definition of perpendicular
$c = 180° - (a + b)$ — 180° in a triangle
$c=180° - (60 + 90) = 30°$
$l = 180° - (K + m)$ — 180° in a triangle