

9. A: 360°
10. B: trapezoid
11. A: $5+7+9+3=24$ in
12. C: $9+10+15=34$ m
13. D: unlabeled horizontal side has a length of $8.5-4=4.5$ in
 $P=4+3+4.5+2+8.5+5=27$ in
14. B: $P=4(11)=44$ cm
15. E: $P=2(25)+2(15)=50+30=80$ ft

Test 9

1. B: height
2. E: perpendicular to the base
3. B: divide by two
4. D: find the average base
5. A: 90° , because they are perpendicular
6. C: 100 sq ft: area is always in square units
7. E: not enough information; need to know both bases
8. D: $A=\frac{1}{2}bh=\frac{1}{2}(8)(4)=16$ m²
9. C: $A=bh=(15)(3)=45$ units²
10. E: not enough information; perpendicular height is needed
11. A: $A=\frac{5+9}{2}(3.5)=24.5$ in²
12. A: $A=\frac{1}{2}bh=\frac{1}{2}(15)(6)=45$ m²
13. C: $A=(4)(3)+(2)(8.5)=12+17=29$ ft²
14. E: $A=bh=(11)(10)=110$ cm²
all 4 sides of a rhombus are congruent
15. A: $A=bh=(25)(15)=375$ ft²

Test 10

1. D: obtuse
2. C: isosceles
3. B: acute
4. C: If it has a 90° angle, the remaining two angles must add to 90° .
 $90^\circ-28^\circ=62^\circ$
5. B: scalene
6. E: impossible to draw
 $61^\circ+62^\circ+61^\circ=184^\circ$
7. B: acute and equilateral
8. C: 6 is the smallest number among the choices which, when added to 7 yields a result greater than 12.
9. E: impossible to draw
 $2+2=4$; $4<5$
10. A: isosceles and right
11. C: equilateral, because the third angle must also be 60°
12. D: right $180^\circ-(74^\circ+16^\circ)=180^\circ-90^\circ=90^\circ$
13. A: isosceles and acute
14. B: equilateral
15. A: $34^\circ+73^\circ+73^\circ=180^\circ$

Unit Test I

I

1. intersection
2. congruent
3. empty or null
4. triangle
5. supplementary
6. reflex
7. bisector
8. angle

II

1. check with protractor
2. check with protractor: smaller angles should each measure 40°

III

1. a triangle with two equal sides
2. a triangle with no equal sides

IV

$$P = 4 + 9 + 5 + 11 = 29 \text{ ft}$$

$$A = \frac{11+9}{2}(3) = 10(3) = 30 \text{ ft}^2$$

V

1. 110° : vertical angles
2. $m\angle 11 = m\angle 3 = 110^\circ$
corresponding angles
 $m\angle 9 = 180^\circ - m\angle 11 = 180^\circ - 110^\circ = 70^\circ$
supplementary angles
3. 1 & 9, 3 & 11, 2 & 10, 4 & 12, 5 & 13, 7 & 15, 6 & 14, or 8 & 16
4. 4 & 9, 3 & 10, 7 & 14, or 8 & 13
5. $\angle 1, 4, 9$, or 12 : \angle 's 5, 8, 13 and 16 appear to be acute but we don't know for certain, because no information is given about these angles.
6. no: \overleftrightarrow{AC} is not parallel to \overleftrightarrow{BD}
7. B and C, or A and D
8. point A
9. infinite: Only two points are labeled, but every line contains an infinite number of points.
10. one: length
11. $\angle 2, \angle 3, \angle 10$, or $\angle 11$
12. $\angle 9$

VI

$$A = \frac{1}{2}bh = \frac{1}{2}(6)(2) = 6 \text{ in}^2$$

VII

rectangle, square, parallelogram, rhombus

VIII

1. $\{2, 3, 4, 5, 6\}$: all elements that appear in either of the two sets
2. no: the element 2 is found in set A, but not in set B

Test 11

1. C: 4 diagonals, forming 5 triangles
2. A: 10 triangles
3. D: $(N-2)180^\circ \Rightarrow ((11)-2)180^\circ = (9)180^\circ = 1,620^\circ$
4. A: pentagon
5. A: 360°
6. B: $(N-2)180^\circ \Rightarrow ((8)-2)180^\circ = (6)180^\circ = 1,080^\circ$ total
 $1,080^\circ \div 8 = 135^\circ$ per angle
7. E: The exterior angles of a polygon always add up to 360° .
8. C: $(N-2)180^\circ \Rightarrow ((5)-2)180^\circ = (3)180^\circ = 540^\circ$ total
 $540^\circ \div 5 = 108^\circ$ per angle
 $m\angle b = 180^\circ - (36^\circ + 108^\circ) = 180^\circ - 144^\circ = 36^\circ$
9. E: $(N-2)180^\circ \Rightarrow ((8)-2)180^\circ = (6)180^\circ = 1,080^\circ$ total
 $1,080^\circ \div 8 = 135^\circ$
 $m\angle a = 135^\circ \div 2 = 67.5^\circ$
10. B: $(N-2)180^\circ \Rightarrow ((6)-2)180^\circ = (4)180^\circ = 720^\circ$
11. A: $360^\circ \div 6 = 60^\circ$
12. C: 720° for all interior angles (from #9)
 $720^\circ \div 6 = 120^\circ$
 $120^\circ \div 2 = 60^\circ$
for each new angle
13. D: $m\angle QVR = 180^\circ - (30^\circ + 120^\circ) = 180^\circ - 150^\circ = 30^\circ$
14. B: $m\angle RVU = m\angle QVU - m\angle QVR = 120^\circ - 30^\circ = 90^\circ$
15. A: $m\angle TRU = m\angle SRQ \div 4 = 120^\circ \div 4 = 30^\circ$