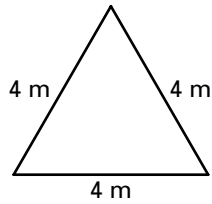


**LESSON
4.1****Practice A**

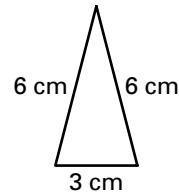
For use with pages 224–232

Classify the triangle by its sides.

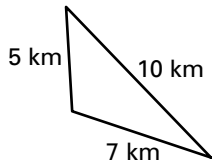
1.



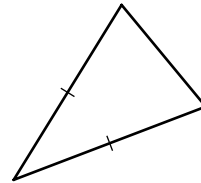
2.



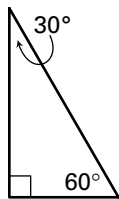
3.



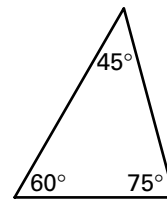
4.

**Classify the triangle by its angles.**

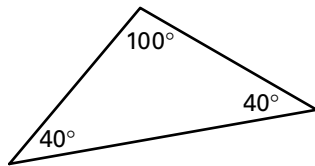
5.



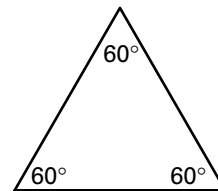
6.



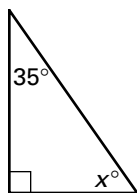
7.



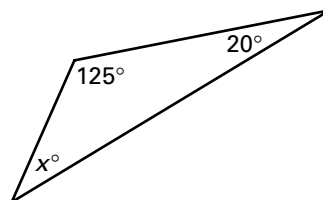
8.

**Find the value of x .**

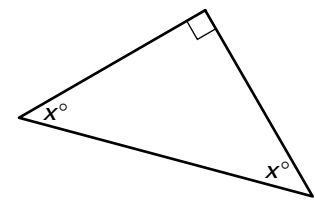
9.



10.



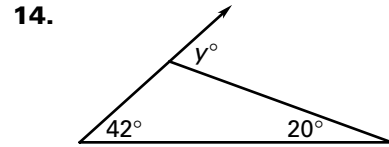
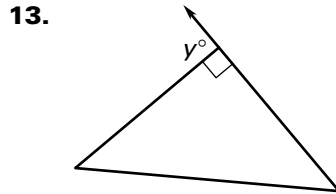
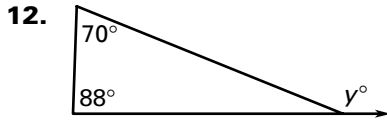
11.



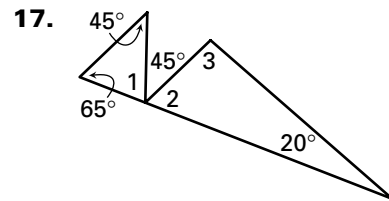
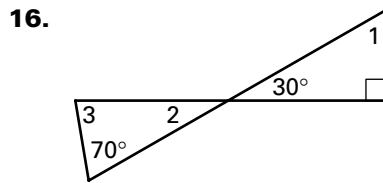
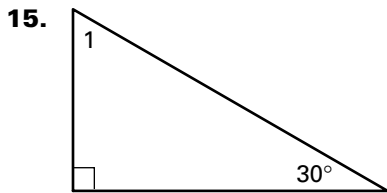
LESSON
4.1

Practice A *continued*
For use with pages 224–232

Find the value of y .

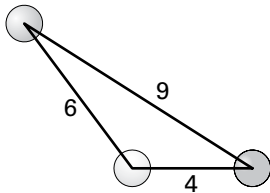


Find the measure of the numbered angles.



18. In $\triangle ABC$, $\angle A \cong \angle C$ and $\angle B$ is a right angle. Find the measure of each angle.

19. **Billiards** Three balls remain on a pool table. The distance between the three balls is shown in the diagram. Classify the triangle formed by its sides. Then copy the triangle, measure the angles, and classify the triangle by its angles.



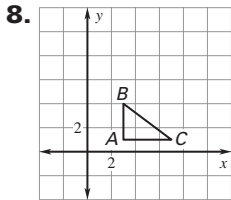
Lesson 4.1

Practice Level A

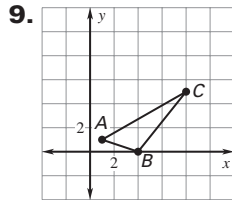
1. equilateral 2. isosceles 3. scalene
4. isosceles 5. right 6. acute 7. obtuse
8. equiangular 9. 55 10. 35 11. 45 12. 158
13. 90 14. 62 15. $m\angle 1 = 60^\circ$
16. $m\angle 1 = 60^\circ$; $m\angle 2 = 30^\circ$; $m\angle 3 = 80^\circ$
17. $m\angle 1 = 70^\circ$; $m\angle 2 = 65^\circ$; $m\angle 3 = 95^\circ$
18. $m\angle A = 45^\circ$; $m\angle B = 90^\circ$; $m\angle C = 45^\circ$
19. scalene; obtuse

Practice Level B

1. sometimes 2. never 3. never 4. sometimes
5. scalene, obtuse 6. scalene, right
7. isosceles, acute



scalene; right triangle



scalene; not a right triangle

- 10.

isosceles; not a right triangle

11. 30; right 12. 25; acute 13. 120; acute
14. 131° 15. 100° 16. 125° 17. 36° 18. 122°
19. 122° 20. 38° 21. $m\angle A = 60^\circ$, $m\angle B = 30^\circ$, $m\angle C = 90^\circ$
22. $m\angle A = 60^\circ$, $m\angle B = 30^\circ$, $m\angle C = 90^\circ$
23. 60, 30 24. 45, 51 25. 24, 66
26. scalene; right

Practice Level C

1. scalene; 20; acute 2. isosceles; 25; acute
3. equilateral; 60; equiangular 4. $x = 10$; $y = 71$
5. $x = 50$; $y = 33$ 6. $x = 15$; $y = 42$
7. $x = 85$; $y = 58$ 8. 60° 9. 120° 10. 60°
11. 120° 12. 30° 13. 30° 14. 74°
15. $m\angle B = 115^\circ$; $m\angle C = 23^\circ$ 16. 8 in. by 11 in. by 11 in.; 8 in. by 8 in. by 14 in.
17. 864 in. 18. 576 in. 19. 1344 in.

Review for Mastery

1. right scalene 2. equiangular equilateral
3. obtuse isosceles 4. $m\angle ABD = 90^\circ$, $m\angle BDC = 60^\circ$
5. $m\angle CAB = 80^\circ$, $m\angle CBA = 10^\circ$

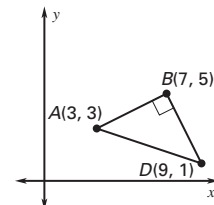
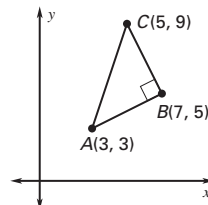
Problem Solving Workshop: Worked Out Example

1. The legs are \overline{RS} and \overline{TS} , and the base is \overline{RT} ; $m\angle 1 = 55^\circ$, $m\angle 2 = 110^\circ$
2. The legs are \overline{RS} and \overline{TS} , and the hypotenuse is \overline{RT} ; $m\angle SRT = 54^\circ$, $m\angle 1 = 144^\circ$

Challenge Practice

1. (5, 9)

2. (9, 1)



3. 60° , 60° , 60° 4. 63° , 36° , 81° ; acute
5. $x = 29$, $y = 64$ 6. $x = 12.9$, $y = 51.3$
7. $m\angle A = m\angle 1$

8. GIVEN: $\triangle ABC$

PROVE: Sum of exterior angles of $\triangle ABC$ is 360° .

By the definition of a straight angle, you know that $m\angle 1 + m\angle 2 = 180^\circ$, $m\angle 3 + m\angle 4 = 180^\circ$, and $m\angle 5 + m\angle 6 = 180^\circ$. So, it follows that the sum of all six angles is $180^\circ + 180^\circ + 180^\circ = 540^\circ$. By the Triangle Sum Theorem, you know that $m\angle 2 + m\angle 4 + m\angle 6 = 180^\circ$. The exterior angles of the triangle are $\angle 1$, $\angle 3$, and $\angle 5$. To find the sum of these three angles, subtract 180° from the sum of all six angles, 540° , to obtain 360° .

Lesson 4.2

Practice Level A

1. Check student diagram; $\overline{CP} \cong \overline{BI}$; $\overline{PN} \cong \overline{IY}$; $\overline{NC} \cong \overline{YB}$; $\angle C \cong \angle B$; $\angle P \cong \angle I$; $\angle N \cong \angle Y$
2. \overline{OP} 3. $\angle F$ 4. $\angle G$ 5. 110° 6. 7 km
7. $\triangle QPO$ 8. $\triangle EIG \cong \triangle QOM$; all corresponding sides and angles are congruent.
9. none 10. $\triangle KLN \cong \triangle MNL$; all corresponding sides and angles are congruent.
11. $\triangle DEG \cong \triangle HEF$; all corresponding sides and angles are congruent. 12. 25 13. 70 14. 11