3.2 Exercises

Check It Out
Help with Homework
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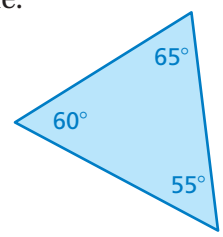
Vocabulary and Concept Check

1. **VOCABULARY** You know the measures of two interior angles of a triangle. How can you find the measure of the third interior angle?
2. **VOCABULARY** How many exterior angles does a triangle have at each vertex? Explain.
3. **NUMBER SENSE** List the measures of the exterior angles for the triangle shown at the right.



Practice and Problem Solving

Find the measures of the interior angles.

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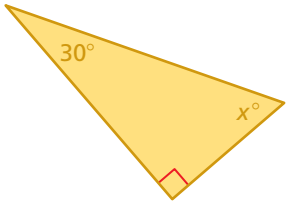

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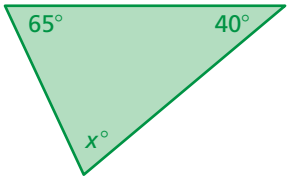

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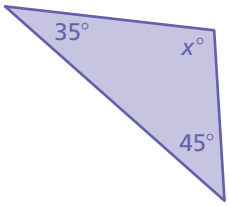

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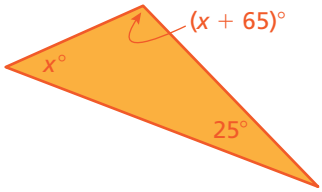

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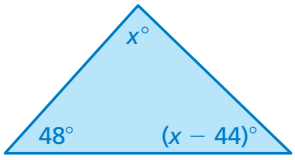

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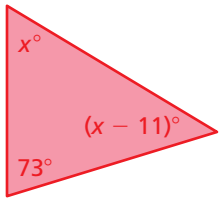
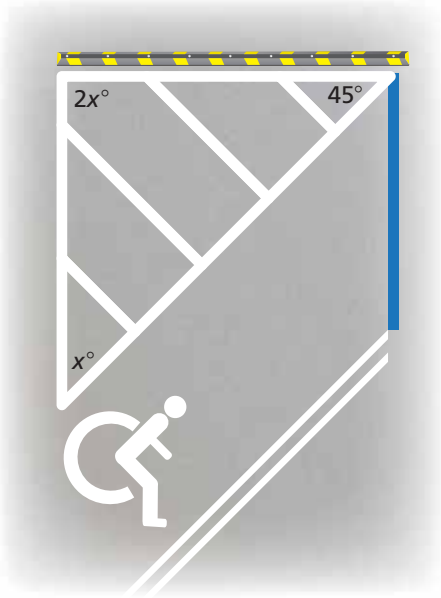
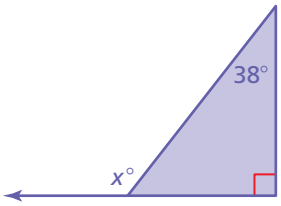


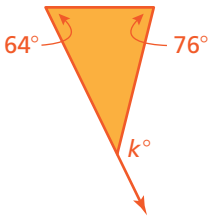
10. **BILLIARD RACK** Find the value of x in the billiard rack.

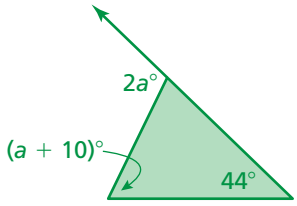
11. **NO PARKING** The triangle with lines through it designates a no parking zone. What is the value of x?



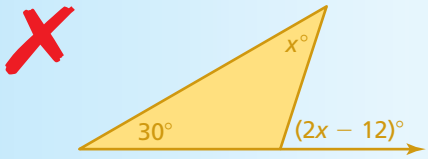
Find the measure of the exterior angle.

12. 

13. 

14. 

15. ERROR ANALYSIS Describe and correct the error in finding the measure of the exterior angle.

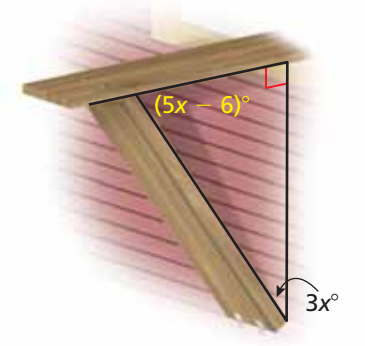


$(2x - 12) + x + 30 = 180$

$3x + 18 = 180$

$x = 54$

The exterior angle is $(2(54) - 12)° = 96°$.



16. RATIO The ratio of the interior angle measures of a triangle is 2 : 3 : 5. What are the angle measures?

17. CONSTRUCTION The support for a window air-conditioning unit forms a triangle and an exterior angle. What is the measure of the exterior angle?

18. REASONING A triangle has an exterior angle with a measure of 120°. Can you determine the measures of the interior angles? Explain.

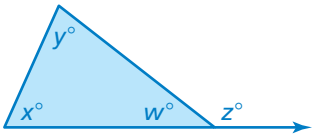
Determine whether the statement is *always*, *sometimes*, or *never* true. Explain your reasoning.

19. Given three angle measures, you can construct a triangle.

20. The acute interior angles of a right triangle are complementary.

21. A triangle has more than one vertex with an acute exterior angle.

22. **Precision** Using the figure at the right, show that $z = x + y$. (*Hint:* Find two equations involving w.)



Fair Game Review *What you learned in previous grades & lessons*

Solve the equation. Check your solution. *(Section 1.2)*

23. $-4x + 3 = 19$ **24.** $2(y - 1) + 6y = -10$ **25.** $5 + 0.5(6n + 14) = 3$

26. MULTIPLE CHOICE Which transformation moves every point of a figure the same distance and in the same direction? *(Section 2.2)*

Ⓐ translation Ⓑ reflection Ⓒ rotation Ⓓ dilation