

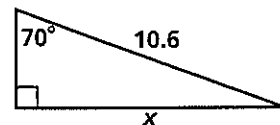
# Cumulative Review

## Chapters 1–8

For Exercises 1–13, choose the correct letter.

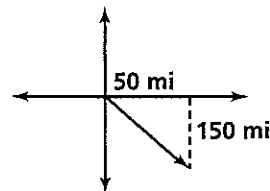
1. Find the value of  $x$  to the nearest tenth.

- A. 10.0      B. 7.0      C. 3.9      D. 3.6



2. Find the magnitude and direction of the vector.

- F. 158.1 mi,  $18^\circ$  west of south      G. 141.4 mi,  $18^\circ$  south of east  
 H. 158.1 mi,  $72^\circ$  south of east      J. 141.4 mi,  $72^\circ$  south of east



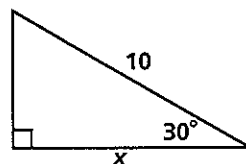
3. By which postulate or theorem are the triangles congruent?

- A. HL      B. SAS      C. SSS      D. AAS



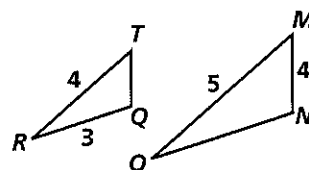
4. What is the exact length of  $x$ ?

- F.  $10\sqrt{2}$       G.  $5\sqrt{3}$   
 H.  $10\sqrt{3}$       J.  $5\sqrt{2}$



5.  $\triangle TQR \sim \triangle MNO$ . Find  $ON$  and  $TQ$ .

- A. 3.75, 2.4      B. 2.4, 5  
 C. 16, 3.2      D. 3.75, 3.2



6. The hypotenuse of an isosceles right triangle is 6 ft long. What is the length of one leg?

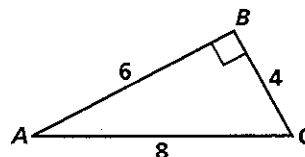
- F.  $6\sqrt{2}$       G.  $3\sqrt{2}$       H. 12      J. 24

7. A triangle has angle measures of  $2x + 8$ ,  $3x + 5$ , and  $6x + 2$ . What are the measures of the angles from smallest to largest?

- A. 30, 58, 92      B. 33, 47, 100      C. 38, 50, 92      D. 38, 52, 90

8. Which is the greatest in  $\triangle ABC$ ?

- F.  $\sin A$       G.  $\cos C$   
 H.  $\tan A$       J.  $\tan C$



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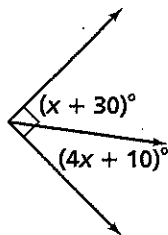
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## Cumulative Review (continued)

### ..... chapters 1–8

9. A right triangle has a leg that is 5 in. long and a hypotenuse that is 13 in. long. Find the length of the third side.  
A. 6 in.      B. 8 in.      C. 10 in.      D. 12 in.
10. A 15-ft ladder slides down a wall of a building until the ladder forms a  $52^\circ$  angle with the ground. How high up the wall will the ladder reach at this point?  
F. 11.8 ft      G. 24.4 ft      H. 19 ft      J. 11.7 ft
11. A stone pathway forms the diagonal of a square garden. One side of the garden is 40 ft. How long is the pathway?  
A. 40 ft      B.  $40\sqrt{2}$  ft      C.  $46\sqrt{3}$  ft      D. 80 ft
12. Find the length of segment  $AB$  with endpoints at  $A(-4, 6)$  and  $B(-1, 2)$ .  
F. 8      G. 2.6      H. 11      J. 5
13. Which quadrilateral has congruent diagonals?  
A. trapezoid      B. parallelogram      C. rhombus      D. rectangle

14. Find the value of  $x$  in the figure at the right.



15. Write a counterexample for the statement “If you are in a tree, then you used a ladder.”
16. **Writing** Use indirect reasoning to show that an equilateral triangle cannot have an obtuse angle.
17. **Writing** Why can trigonometric ratios *not* be used on the right angle of a triangle?
18. **Open-Ended** In spherical geometry, *point* has the same meaning as in Euclidean geometry, but a “plane” is the surface of a sphere and a “line” is a great circle of a sphere. State a property of Euclidean geometry, and explain how it does not hold true in spherical geometry.