Name _____ Class _____ Date _____

Chapter Test — Form A

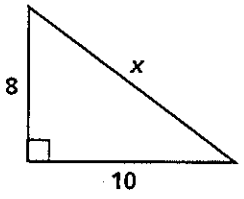
Chapter 8

The lengths of three sides of a triangle are given. Describe each triangle as *acute, right,* or *obtuse.*

1. 14, 48, 50 **2.** 6, 7, 9 **3.** $\sqrt{11}, 5, 7$

Find the values of the variables. Leave your answers in simplest radical form.

4.



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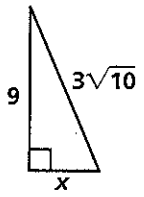

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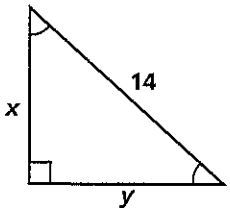

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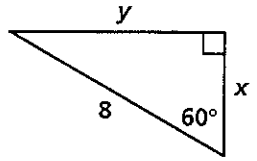
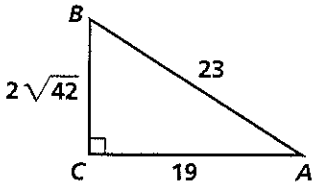


Express sin *A*, cos *A*, and tan *A* as ratios.

8.



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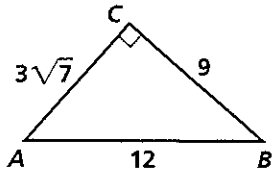
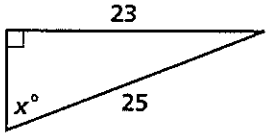


Find the value of *x*. Round lengths of segments to the nearest tenth and angle measures to the nearest degree.

10.



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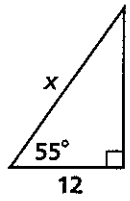
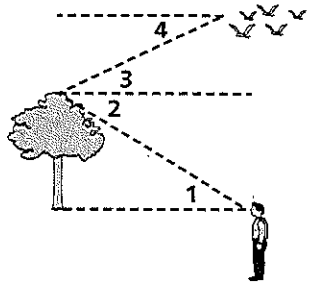


Find the measure of the acute angle that each line makes with a horizontal line. Round your answers to the nearest tenth.

12. $y = 4x - 1$ **13.** $y = \frac{1}{2}x - 4$

14. Describe each angle as it relates to the objects in the diagram.

a. $\angle 1$ **b.** $\angle 2$ **c.** $\angle 3$ **d.** $\angle 4$



Chapter Test (continued) Form A

Chapter 8

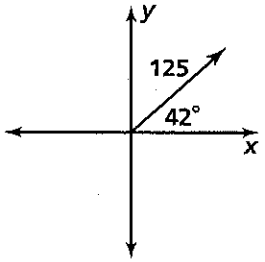
15. A surveyor measures the top of a building 50 ft away from him. His angle-measuring device is 4 ft above ground. The angle of elevation to the top of the building is 63°. How tall is the building?

16. A forest ranger looking out from a ranger's station can see a forest fire at a 35° angle of depression. The ranger's position is 100 ft above the ground. How far is it from the ranger's station to the fire?

17. **Writing** Let x and y be the measures of two acute angles of a right triangle. Explain why $\tan x° = \frac{1}{\tan y°}$. Include a diagram with your explanation.

Describe each vector using ordered pair notation. Round the coordinates to the nearest tenth.

18.



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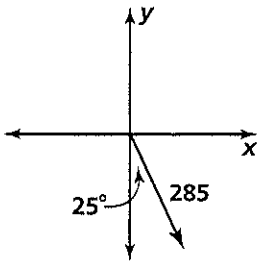
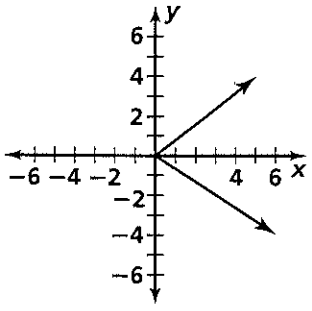


20. A moving van traveled 200 mi west and 70 mi south. Find the distance from the point of origin to the destination, and the direction traveled.

Find the sum of each pair of vectors. Give your answers in ordered pair notation.

21.



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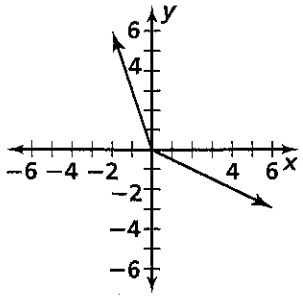

23. **Open-Ended** Draw two vectors with different directions that have a sum $\langle 5, 3 \rangle$.