Lesson 8-1

Write a similarity statement comparing the three triangles in each diagram.
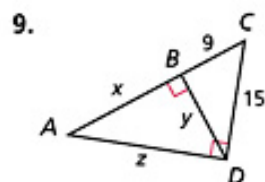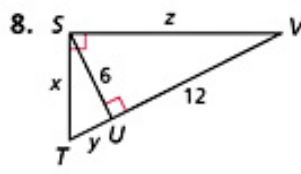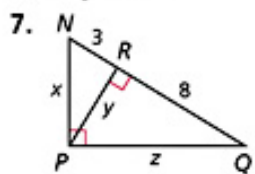
1.

2.

3.
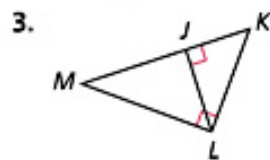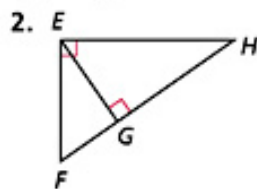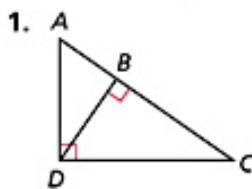
Find the geometric mean of each pair of numbers. If necessary, give the answers in simplest radical form.

4. 3 and 9   **5.** 4 and 7   **6.** $\frac{1}{2}$ and 5

Find x, y, and z.

7.

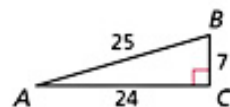

8.

9.

Lesson 8-2

Write each trigonometric ratio as a fraction and as a decimal rounded to the nearest hundredth.

10. $\sin A$ **11.** $\cos A$ **12.** $\tan A$

Use a special right triangle to write each trigonometric ratio as a fraction.

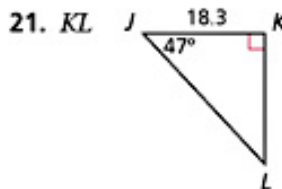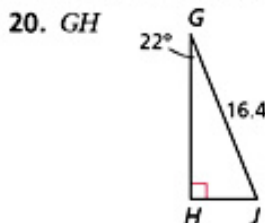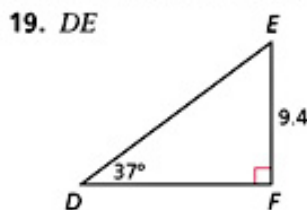**13.** $\cos 30°$ **14.** $\sin 45°$ **15.** $\tan 60°$

Use your calculator to find each trigonometric ratio. Round to the nearest hundredth.

16. $\sin 38°$ **17.** $\cos 47°$ **18.** $\tan 21°$

Find each length. Round to the nearest hundredth.

19. DE

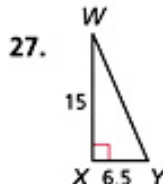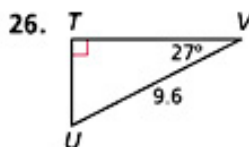**20.** GH

21. KL

Lesson 8-3

Use your calculator to find each angle measure to the nearest degree.

22. $\tan^{-1}(3.5)$ **23.** $\sin^{-1}\left(\frac{1}{5}\right)$ **24.** $\cos^{-1}(0.05)$

Find the unknown measures. Round lengths to the nearest hundredth and angle measures to the nearest degree.

25.

26.

27.

For each triangle, find the side lengths to the nearest hundredth and the angle measures to the nearest degree.
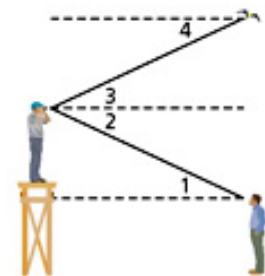
28. $A(1, 4)$, $B(1, 1)$, $C(4, 1)$ **29.** $D(-3, 5)$, $E(-3, 1)$, $F(2, 5)$

Classify each angle as an angle of elevation or angle of depression.

30. $\angle 1$ **31.** $\angle 2$
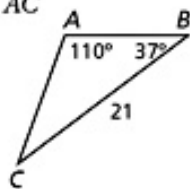
32. $\angle 3$ **33.** $\angle 4$

Use a calculator to find each trigonometric ratio. Round to the nearest hundredth.

34. $\cos 127°$ **35.** $\tan 131°$ **36.** $\sin 114°$

37. $\tan 158°$ **38.** $\sin 85°$ **39.** $\cos 161°$

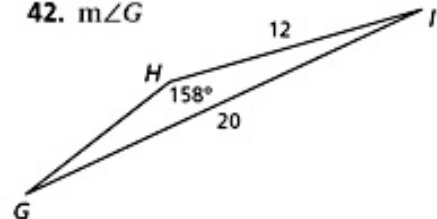Find each measure. Round lengths to the nearest tenth and angle measure to the nearest degree.
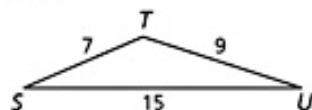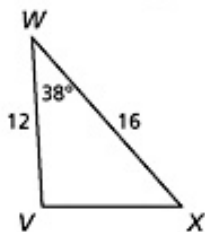
40. AC

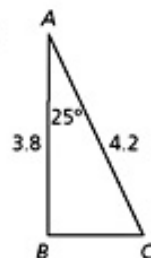**41.** $m\angle E$

42. $m\angle G$
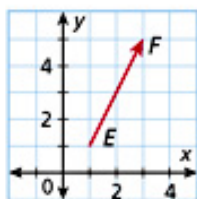
43. $m\angle T$

44. VX

45. BC

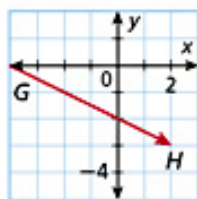Write each vector in component form.

46. $\overrightarrow{AB}$ with $A(2, 3)$ and $B(5, 6)$

47. the vector with initial point $C(3, 6)$ and terminal point $D(2, 4)$

48. $\overrightarrow{EF}$

49. $\overrightarrow{GH}$

Draw each vector on a coordinate plane. Find its magnitude to the nearest tenth.

50. $\langle -3, 2 \rangle$ **51.** $\langle 4, 3 \rangle$ **52.** $\langle 2, -5 \rangle$

Draw each vector on a coordinate plane. Find the direction of the vector to the nearest degree.
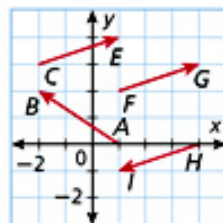
53. A wind velocity is given by the vector $\langle 3, 4 \rangle$.

54. The velocity of a rocket is given by the vector $\langle 8, 1 \rangle$.

Identify each of the following in the diagram.

55. equal vectors   **56.** parallel vectors

Find each vector sum.

57. $\langle 5, 0 \rangle + \langle -3, 6 \rangle$ **58.** $\langle -3, -1 \rangle + \langle 0, -7 \rangle$

59. $\langle 1, 8 \rangle + \langle 2, 3 \rangle$ **60.** $\langle -2, -1 \rangle + \langle -7, 9 \rangle$

Extra Practice