

Name \_\_\_\_\_

# 10-7B Lesson Master

**Questions on SPUR Objectives**  
See Student Edition pages 724–727 for objectives.

## SKILLS Objective B

In 1-4, if possible, find two angle measures  $\theta$  with  $0^\circ < \theta < 180^\circ$  where

- |                                   |                                  |
|-----------------------------------|----------------------------------|
| 1. $\sin \theta = 0.788$ . _____  | 2. $\sin \theta = 0.308$ . _____ |
| 3. $\sin \theta = -0.995$ . _____ | 4. $\sin \theta = 0.988$ . _____ |

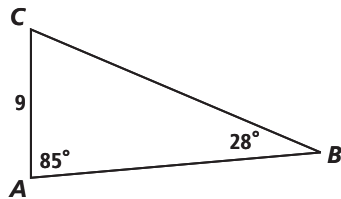
In 5-8,  $\angle B$  is an acute angle with  $\sin B = \sin A$ . Find  $m\angle B$  if

- |                                    |                                    |
|------------------------------------|------------------------------------|
| 5. $m\angle A = 104^\circ$ . _____ | 6. $m\angle A = 172^\circ$ . _____ |
| 7. $m\angle A = 97^\circ$ . _____  | 8. $m\angle A = 139^\circ$ . _____ |

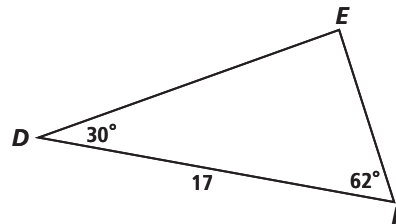
## SKILLS Objective C

In 9 and 10, use the triangle below each question and find the value to the nearest tenth.

9.  $BC =$  \_\_\_\_\_

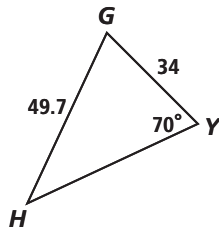


10.  $DE =$  \_\_\_\_\_

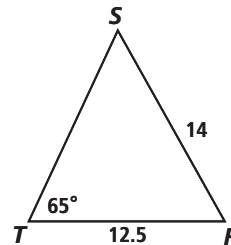


In 11 and 12, refer to the triangle below each question and use the Law of Sines to find the angle measure.

11.  $m\angle G =$  \_\_\_\_\_



12.  $m\angle R =$  \_\_\_\_\_



## PROPERTIES Objective F

13. **Multiple Choice** If  $\sin 34^\circ = n$ , then \_\_\_\_\_.

- |                              |                        |
|------------------------------|------------------------|
| A $\sin 34^\circ = 180 - n$  | B $\sin 56^\circ = n$  |
| C $\sin 146^\circ = 180 - n$ | D $\sin 146^\circ = n$ |

14. If  $\theta$  is between  $0^\circ$  and  $180^\circ$ , how many solutions does the equation have?

- |                               |                               |
|-------------------------------|-------------------------------|
| a. $\cos \theta = 0.58$ _____ | b. $\sin \theta = 0.58$ _____ |
|-------------------------------|-------------------------------|

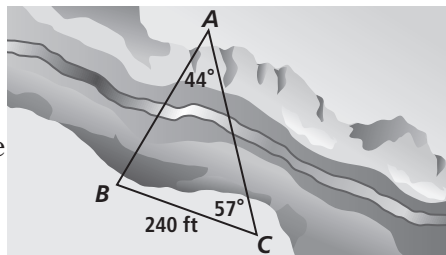
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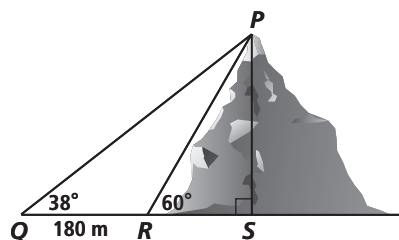
**USES** Objective H

15. A bridge is to be built across a canyon from point  $A$  to point  $B$ . A surveyor drew the diagram at the right based on measurements taken at the site. Find the length of the bridge to the nearest tenth of a foot. \_\_\_\_\_

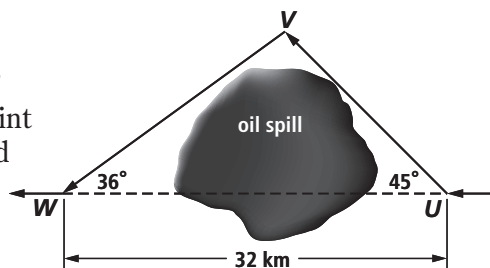


16. In the drawing at the right,  $PS$  is the height of a mountain. Find the given measure.

- a.  $m\angle QRP$  \_\_\_\_\_
- b.  $m\angle RPQ$  \_\_\_\_\_
- c.  $PR$  \_\_\_\_\_
- d.  $PS$  \_\_\_\_\_



17. As shown at the right, a ship heading due west had to detour around an oil spill. At point  $U$ , the ship steered  $45^\circ$  off course, and sailed until it cleared the spill. Then, at point  $V$  it turned back toward its original course and intersected it at a  $36^\circ$  angle at point  $W$ . If the original route from  $U$  to  $W$  is 32 km long, about how many additional kilometers did the ship have to sail? \_\_\_\_\_

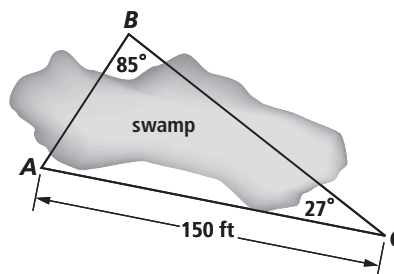


18. Fire stations  $X$  and  $Y$  are 9 blocks apart. The firefighter at station  $X$  sees a fire at point  $Z$  such that  $m\angle YXZ = 30^\circ$ . The firefighter at station  $Y$  sees the fire such that  $m\angle XYZ = 70^\circ$ . About how far is the fire from each station?

- a. from  $Y$  \_\_\_\_\_
- b. from  $X$  \_\_\_\_\_

19. Some students in Advanced Algebra were assigned the task of measuring the distance between two trees separated by a swamp as shown at the right. They determined that the angle formed by tree  $A$ , a dry point  $C$ , and tree  $B$  was  $27^\circ$ . They also knew that  $m\angle ABC$  was  $85^\circ$ . They found that  $AC$  was 150 ft.

About how far apart are the trees? \_\_\_\_\_



20. Two lookout towers,  $L$  and  $M$ , are 50 km apart. The park ranger in Tower  $L$ , Mary, saw a forest fire developing at point  $C$  such that  $m\angle CLM = 40^\circ$ . The park ranger in Tower  $M$ , Raul, saw the same forest fire developing such that  $m\angle CML = 65^\circ$ . About how far away was the fire from Mary? \_\_\_\_\_