

Name _____

10-6B Lesson Master

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

VOCABULARY

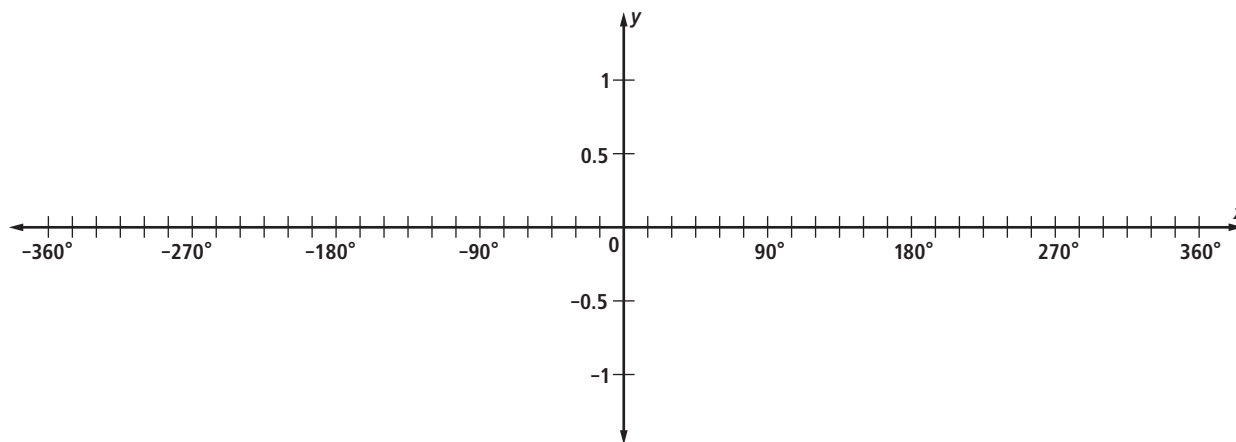
1. Define *sine wave*.

2. **Fill in the Blank** If the graph of a function can be mapped onto itself under a horizontal translation of positive magnitude, then we call this type of function a _____.

3. **Fill in the Blank** Situations that lead to sine waves are called _____.

SKILLS Objective J

4. On the same axes below, graph $f(\theta) = \sin \theta$ and $g(\theta) = \cos \theta$ over the domain $-360 \leq \theta \leq 360$.



Use your graph from Question 4 to help answer Questions 5–13.

5. Give the domain and range of the sine function.

6. Find all θ -intercepts of the cosine function shown on the graph. _____

7. Find a θ -intercept of the cosine function that is *not* shown on the graph.

8. Find the y -intercept of the cosine function. _____

9. Find the y -intercept of the sine function. _____

Name _____

10-6B

page 2

10. How are the intercepts in Questions 8 and 9 and the unit circle related?

11. Name an interval over which the cosine value is positive and the sine value is positive. _____

12. Name an interval over which the cosine value is negative but the sine value is positive. _____

13. Name an interval over which the cosine value is negative and the sine value is negative. _____

Fill in the Blanks In 14–17, refer to your graph from Question 4.

14. As θ increases from 90° to 180° , $\cos \theta$ _____ from _____ to _____.

15. As θ increases from 90° to 180° , $\sin \theta$ _____ from _____ to _____.

16. As θ increases from -360° to -270° , $\sin \theta$ _____ from _____ to _____.

17. As θ increases from -360° to -270° , $\cos \theta$ _____ from _____ to _____.

18. The table below gives heights in feet for tides approximately every 12 hours in Juneau, Alaska from June 1, 2008 to June 5, 2008.

Day	6/1	6/1	6/2	6/2	6/3	6/3	6/4	6/4	6/5	6/5
Time	5:46 AM	5:47 PM	6:35 AM	6:40 PM	7:24 AM	7:31 PM	8:12 AM	8:21 PM	9:00 AM	9:11 PM
Height (ft)	-1.5	2.8	-2	2.6	-4.1	2.4	-4.5	2.3	-4.5	2.4

a. Explain why these data can be modeled by a periodic function.

b. Estimate the domain and range of a sinusoidal function that models these data.
