$\qquad$ PERIOD $\qquad$

BOOK WORK: p. 939 (27-55 odd, 61-65 odd, 66-68)

Isabelle and Karl agreed to meet at the rotating restaurant at the top of a tower in the town center. The restaurant makes one full rotation each hour.

1. Isabelle waits for Karl, who arrives 30 minutes later. Through how many degrees does the restaurant rotate between the time that Isabelle arrives and the time that Karl arrives?
2. Since the restaurant is busy, they don't get menus for another ten minutes. How much farther has the restaurant rotated?
3. By the time they are served dinner, the restaurant has rotated to an angle $30^{\circ}$ short of its orientation when Isabelle arrived.
$\qquad$ a. Write an expression for the length of time that Isabelle has been there.
$\qquad$ b. How long has she been there?
$\qquad$ c. How long has Karl been there?
$\qquad$ d. How far has the restaurant rotated since Karl arrived?
$\qquad$
$\qquad$ PERIOD $\qquad$
4. When their bill comes, it includes a note that the restaurant has rotated $840^{\circ}$ since Isabelle arrived.
$\qquad$ a. How long has it been since they were served dinner?
$\qquad$ b. How many rotations has the restaurant made since Isabelle arrived?
$\qquad$ c. How far is the restaurant from its orientation when Karl arrived?
5. On their way out, they stop and look at a map. A museum is located at a point northeast of the tower with coordinates $(3,2)$.
a. Write the trigonometric function for the angle that the line from the tower to the museum with a line due north from the tower. the museum than the tower?

An advertisement on a kiosk near the bus stop rotates through $765^{\circ}$ while Aaron waits for his bus.
6. What is the difference in the orientation of the advertisement between when Aaron arrived at the bus stop and when the bus came?

A $45^{\circ}$
B $90^{\circ}$
C $315^{\circ}$
D $405^{\circ}$
7. If the advertisement rotates at a rate of one rotation every 10 minutes, how long does Aaron wait for his bus?

F Less than 2 min
G Between 2 min and 10 min
H Between 10 min and 20 min
J More than 20 min

