

# WAVE TANK LAB INSTRUCTIONS

Monday, April 9, 2018 8:37 AM

## A. FREQUENCY

- SET THE MOTOR (WAVE GENERATOR) AT A LOW SPEED SO THAT THE WAVES ARE LONG.
- DRAW DIAGRAM OF WAVE FRONTS (CRESTS)
- REPEAT AT HIGH  $f$  (SHORT  $\lambda$ )

## B. REFLECTION

- 1 {
  - SEND STRAIGHT WAVES AT THE BARRIER AT AN ANGLE
  - DRAW WAVE FRONTS AND REFLECTED WAVE FRONTS.
- 2 {
  - SEND STRAIGHT WAVES AT A CURVED REFLECTOR.
  - DRAW WAVE PATTERNS
- 3 {
  - USE YOUR FINGER TIP, OR A PENCIL TO CREATE CIRCULAR WAVES AT THE FOCUS (SEE # 2)
  - DRAW
- 4 {
  - SEND CIRCULAR WAVES TOWARD A STRAIGHT BARRIER.
  - DRAW REFLECTED WAVES

## C. DIFFRACTION

- USE THE MOTOR SPEED TO SET  $\lambda$  AS DESCRIBED ON SHEET.
- SET GAPS AS DESCRIBED.
- DRAW THREE CASES

(D)

### REFRACTION

SEND WAVES FROM DEEP INTO SHALLOW  
(FAST INTO SLOW)

DRAW TWO CASES: LONG  $\lambda$   
SHORT  $\lambda$

DRAW NORMAL LINES AND WAVE DIRECTIONS

(E)

### INTERFERENCE

- USE THE TWO-SOURCE "DIPPERS" AND CREATE OVERLAPPING CIRCULAR WAVES.
- DRAW THE PATTERN.
- SHOW NODAL LINES (REGIONS OF CALM WATER)