Homework 7

1) Draw an ideal wave and label the parts

2) Diagrammatically show the changes in the orbits of water particles at various depths below the water surface for both deep-water and shallow-water waves.

3) Explain the difference between capillary and gravity waves.
4) Define sea and swell. Describe how each forms.

5) What factors limit the maximum size of wind waves in the ocean?

6) What are seismic sea waves (tsunamis)? How and where are they formed? What areas are most likely to experience tsunamis?

7) The length of a wave in water of 50m depth is 85m. What is its length at 0.8m depth as it progresses shoreward? If the celerity at 85m is C, calculate the celerity at 0.8m.

8) An atmospheric disturbance at sea generates storm waves with a period of 8 seconds. Calculate how long it will take the wave energy generated by the storm to reach a beach 800km away.

9) If a seismic disturbance generates waves with a period of 15 minutes, calculate the length of time it will take the waves to go 800km. (Assume the mean depth of the water to be 4km.)