

Chapter 11

- 1) What is mass density?
- 2) What are the SI units for pressure?
- 3) How does pressure change with depth?
- 4) What is gauge pressure?
- 5) What is Pascal's principle?
- 6) What is Archimedes' principle? How do we apply it?
- 7) What is an ideal fluid?
- 8) What is the equation of continuity? What does it mean?
- 9) What is the conservation of energy for a fluid in motion?
- 10) What is Bernoulli's equation? How do we apply it?

Chapter 12

- 1) What are the common temperature scales? How do they relate? How are they calibrated?
- 2) What is the SI temperature scale?
- 3) What is the absolute zero temperature?
- 4) What is linear thermal expansion?
- 5) What is volume thermal expansion?
- 6) How do the coefficients relate?
- 7) What is heat? What are its units? How do we convert between the units?
- 8) What is the equation for heat for temperature changes?
- 9) What are phase changes? What are the equations for heat for phase changes?
- 10) How do we work with thermal equilibrium when two or more substances are in contact?

Chapter 13

- 1) What is convection?
- 2) What is conduction? What do all the variables in the equation mean? What units can we use for temperature?

- 3) What is radiation?
- 4) What is the Stefan-Boltzmann law of radiation? What units should we use for temperature?
- 5) What is a perfect blackbody?

## Chapter 14

- 1) What is the ideal gas law? What units do we use for all the variables in the equation?
- 2) What is the ideal gas constant? What is Boltzmann's constant? How do we write the ideal gas law in terms of Boltzmann's constant?
- 3) What is Boyle's law?
- 4) What is Charles' law?
- 5) What is the Gay-Lussac law?
- 6) What is the average translational kinetic energy of a particle?
- 7) What is the internal energy of a monatomic ideal gas?

## Chapter 15

- 1) What is the zeroth law of thermodynamics?
- 2) What is the first law of thermodynamics?
- 3) What is an isothermal process? How is it represented on a pV diagram? What are W, Q and  $\Delta U$  for an isothermal process?
- 4) What is an isobaric process? How is it represented on a pV diagram? What are W, Q and  $\Delta U$  for an isobaric process?
- 5) What is an isochoric process? How is it represented on a pV diagram? What are W, Q and  $\Delta U$  for an isochoric process?
- 6) What is an adiabatic process? How is it represented on a pV diagram? What are W, Q and  $\Delta U$  for an adiabatic process? How does it differ from the other 3 processes?
- 7) What are  $C_v$ ,  $C_p$ , and  $\gamma$ ? How are they related?
- 8) What is  $\Delta U$  for a (reversible) cycle?
- 9) What is entropy?
- 10) What is the second law of thermodynamics?
- 11) What is an engine? What is a Carnot engine? What is the efficiency of an engine? Of a Carnot engine?