Please answer the following questions. Be precise and thorough in explaining your answers.

Q.1: Let \(L^A = 100; \ L^B = 200; \ a_{LX} = 8; \ a_{LY} = 4; \ b_{LX} = 10; \) and \(b_{LY} = 8,\)

(a) Draw the production possibilities frontier for each country. Be sure to label carefully. In autarky, what will be the relative price of each good in each country? Why?
(b) Which country has an absolute advantage in which good(s)? Why? What would the theory of absolute advantage predict about future direction of trade? Why? If free trade according to absolute advantage were allowed, what degree of productive specialization would occur? Why? Does your answer depend on taste in the two countries? Why?
(c) Answer the question in part (b) for the principle of comparative advantage.
(d) How your answers in (b) differ from your answers in (c)? Why?
(e) A senator from country B who vaguely remembers taking a course in international economics back in 1952 asserts, “Trade between these countries will never be mutually beneficial because country A clearly has an absolute advantage in producing both goods.” Comment on your senator’s statement. Do you agree or disagree? Why?
(f) Now suppose country B enjoys a technological advance that reduces its input coefficients from the ones listed above to \(b_{LX} = 5\) and \(b_{LY} = 4.\) How would your answers to (b), (c), and (d) change?

Q.2: Countries Alpha and Beta have identical production possibilities frontiers for producing goods X and Y under constant-cost or Ricardian conditions. Residents of Alpha prefer to consume large amounts of X and small amounts of Y. Residents of Beta prefer to consume large amounts of Y and small amounts of good X.

(a) What conditions must be the same in the two countries to result in identical production possibilities frontiers? Explain.
(b) Illustrate the autarky equilibriums for the two countries.
(c) What is the pattern of comparative advantage? Explain.
(d) If the two countries open trade, how will they specialize in their production? Which country will produce which good? Will they specialize completely, or only partially? Explain.