1. (12 points) Identify all of the following statements that are true about the basics of services.
   A. WSDL allows using the standard types of XML Schema as types for results of operations
      
      Solution: A is true:

   B. UDDI provides a natural means to accommodate trust in services and service providers
      
      Solution: B is false:

   C. We could use screen scraping on a Web page instead of Web services to obtain information, but we
      would have to contend with low-level details of layout to figure out how the information was meant to
      be structured
      
      Solution: C is true:

   D. A UDDI registry may be used to store information about SOAP services but not about REST services
      
      Solution: D is false:

   E. A number of software vendors support SOAP, not for use over the open Web, but to facilitate interoper-
      ating their applications with other applications within an enterprise
      
      Solution: E is true:

   F. An ESB provides an abstraction over infrastructure to support engaging services via messaging or HTTP
      
      Solution: F is true:

2. (10 points) Identify all of the following statements that are true about knowledge modeling, RDF, and OWL
   A. If we find two domains asserted for an RDF property, we treat the two domains as being unioned
      together
      
      Solution: A is false: it is the intersection of the domains, not their union; in essence each assertion
      applies

   B. If we find two domains asserted for an OWL property, we can infer that the two domains are equal
      
      Solution: B is false: same as for RDF, we can infer the intersection

   C. If we make conflicting assertions in OWL within the same document, the last one to be read in wins out
      
      Solution: C is false: no a contradiction is a contradiction

   D. The main advantage of reification in RDF is to enable us to express three-party relationships in RDF
      
      Solution: D is false: reification has nothing to do with three-party relationships as such

   E. OWL DL provides special means to deal with reified statements
3. (12 points) Consider a simple modeling situation from a health care setting. A medical professional (medico, for short) helps a patient; a patient is helpedBy a medico (helpedBy is an inverse of helps). A medico may be a physician or a nurse or a surgeon. A medico orders a test on a patient from a laboratory.

A. We would assert that helps is an Inverse Functional Property to ensure that each patient is helpedBy exactly one medico

Solution: A is false: Not exactly one; at most one

B. If we assert that helps is an Inverse Functional Property, then helpedBy is automatically asserted to be a Functional Property

Solution: B is true:

C. We cannot define orders directly as an OWL property because it involves three parties: a medico, a patient, and a laboratory

Solution: C is true: we need to define, what in conceptual modeling terms, would be called an associated entity

D. If we assert that medico is a superclass of both physician and surgeon, then physician and surgeon cannot be disjoint

Solution: D is false: can be too

E. If we assert that medico is a superclass of physician, then we can send in a physician for a service (medical procedure) that requires a medico

Solution: E is true: the service apparently needs only the common traits of medics

F. If we assert that medico is a superclass of both physician and surgeon, then we can send in a physician for a service (medical procedure) that requires a surgeon

Solution: F is false: the service may need some traits of surgeons that a physician would not be able to fulfill: we don’t know that all physicians are surgeons