1. Compare and contrast the float and Decimal classes' benefits and drawbacks.

Ans : DECIMAL and FLOAT both are used to store numerical values.

* Float is Approximate-number data type, which means that not all values in the data type range can be represented exactly , it round up the values.

where as Decimal is Fixed-Precision data type, which means that all the values in the data type range can be represented exactly with precision and scale, it doesn’t round up the values.

2. Decimal('1.200') and Decimal('1.2') are two objects to consider. In what sense are these the same object? Are these just two ways of representing the exact same value, or do they correspond to different internal states?

Ans : value can be an integer, string, tuple, float , or another Decimal object. ... For example, Decimal('3.00000') records all five zeros even if the context

All the objects have a state, behavior and identity. State of an object - The state or attributes are the built in characteristics or properties of an object. For example, a T.V has the size, colour, model etc. Behaviour of the object - The behavior or operations of an object are its predefined functions.

3. What happens if the equality of Decimal('1.200') and Decimal('1.2') is checked?

4. Why is it preferable to start a Decimal object with a string rather than a floating-point value?

Ans :Because using floats for currency will just cause errors down the road. floats are NOT usable for representing real world values like money - not reliably, anyways. e.g. 7.47 may actually be 7.4699999923423423423 when converted to float.

5. In an arithmetic phrase, how simple is it to combine Decimal objects with integers?

Ans : Construct a new Decimal object based from value. value can be an integer, string, tuple, float , or another Decimal object. If no value is ..

6. Can Decimal objects and floating-point values be combined easily?

Ans : Decimal objects cannot generally be combined with floats or instances of fractions.

7. Using the Fraction class but not the Decimal class, give an example of a quantity that can be expressed with absolute precision.

Ans : The finite representation of 1/10 is 0.0 0011 ‾ 0.0\overline{0011} 0.00011, but it can't be represented in floating-point because we can't deal with bars in floating-point. We can represent it only in fixed digits/bits using any data type.

8. Describe a quantity that can be accurately expressed by the Decimal or Fraction classes but not by a floating-point value.

Ans : The decimal module was designed to support “without prejudice, both exact unrounded decimal arithmetic (sometimes called fixed-point arithmetic) and rounded ..

Q9.Consider the following two fraction objects: Fraction(1, 2) and Fraction(1, 2). (5, 10). Is the internal state of these two objects the same? Why do you think that is?

Q10. How do the Fraction class and the integer type (int) relate to each other? Containment or inheritance?

Ans : In simple words, has-a relationship in an object is called a member field of an object. Multiple has-a relationships will combine to form a possessive hierarchy. This is to be contrasted with an is-a (is\_a or is a) relationship which constitutes a taxonomic hierarchy (subtyping).