

- (a) The code for the input function is given below. This asks for the input as a floating point number and then uses the function `Set` to convert the input floating point number into the `Currency` representation.

```
void Currency::Input()
{ // Input currency value in floating format.

    float x;
    cout << "Enter the currency amount as "
          << "a floating point number as in dd.cc or -dd.cc"
          << endl;

    cin >> x;
    Set(x);
}
```

- (b) The code for Subtract is very similar to that for Add and is given below:

```

Currency Currency::Subtract(const Currency& x) const
{
    // Subtract x and *this.
    long a1, a2, a3;
    Currency ans;
    // convert invoking object to signed integers
    a1 = dollars * 100 + cents;
    if (sgn == minus) a1 = -a1;

    // convert x to signed integer
    a2 = x.dollars * 100 + x.cents;
    if (x.sgn == minus) a2 = -a2;

    a3 = a1 - a2;

    // convert to currency representation
    if (a3 < 0) {ans.sgn = minus; a3 = -a3;}
    else ans.sgn = plus;
    ans.dollars = a3 / 100;
    ans.cents = a3 - ans.dollars * 100;

    return ans;
}

```

- (cde) The codes for Percent, Multiply, and Divide are similar. All convert the Currency amount into a floating point number, perform the operation, and convert the resulting floating point number back into a Currency object. The codes are given below. All codes, test program, and data can be found in the files `currl.*`.

```

Currency Currency::Percent(float x) const
{
    // Return x percent of *this.

    float a;
    Currency ans;
    // convert *this to a float
    a = dollars + cents / 100.0;
    if (sgn == minus) a = -a;

    ans.Set((a * x) / 100);

    return ans;
}

Currency Currency::Multiply(float x) const
{
    // Return x * (*this).

    float a;
    Currency ans;
    // convert *this to a float
    a = dollars + cents / 100.0;
    if (sgn == minus) a = -a;

    ans.Set(a * x);

    return ans;
}

Currency Currency::Divide(float x) const
{
    // Return (*this)/x.

    float a;
    Currency ans;
    // convert *this to a float
    a = dollars + cents / 100.0;
    if (sgn == minus) a = -a;

    ans.Set(a / x);

    return ans;
}

```
