“Introduction to C++ Programming” Online Course

Pretest/Posttest for Class 3

1. What is in the variable result when the calculation is finished?
   
   \[
   \text{double result} = 123 / 10 + .5;
   \]

2. What is in the variable result when the calculation is finished?
   
   \[
   \text{double result} = 123 / 10. + .5;
   \]

3. What is in the variable result when the calculation is finished?
   
   \[
   \text{char a = 2;}
   \text{short b = 3;}
   \text{long c = 100000L;}
   \text{double result = b / a + c;}
   \]

4. What is in the variable result when the calculation is finished?
   
   \[
   \text{char a = 2;}
   \text{short b = 3;}
   \text{long c = 100000L;}
   \text{double result = (double) b / a + c;}
   \]

5. What is in the variable result when the calculation is finished?
   
   \[
   \text{char a = 2;}
   \text{short b = 3;}
   \text{long c = 100000L;}
   \text{double result = b / a + (double) c;}
   \]

On the next two problems, fix the errors by changing the calculation line; do not change the data types of the variables.

6. Fix the compiler truncation warning message.
   
   \[
   \text{int itemsOrdered;}
   \text{double totalCost;}
   \text{double unitCost;}
   \text{itemsOrdered = totalCost / unitCost;}
   \]
7. Repair the equation so that \texttt{totalBytes} contains the correct amount even on old DOS systems in which an int is actually a short or 16-bits.

\begin{verbatim}
short k = 1024; // 1k bytes = 1024, 1m bytes = 1024k
short numMegs;
long totalBytes;
totalBytes = numMegs * k * k;
\end{verbatim}

8. What is in \texttt{sum} and \texttt{count} after these instructions complete.

\begin{verbatim}
int count = 99;
int sum = 10;
sum += (++count)++;
\end{verbatim}

9. What is in \texttt{sum} and \texttt{count} after these instructions complete.

\begin{verbatim}
int count = 99;
int sum = 10;
sum *= count++;
\end{verbatim}

10. What is in \texttt{sum} and \texttt{count} after these instructions complete.

\begin{verbatim}
int count = 10;
int sum = 99;
sum /= count++;
\end{verbatim}