Source File: ~/1337/12/lab12.(C|CPP|cpp|c++|cc|cxx|cp)
Input: None
Output: Screen
Value: 1

The following problem was recently given to members of the American Mensa Society. Find all five digit numbers, $abcde$, where $0 < a \le 9$ and $0 \le b, c, d, e \le 9$ such that:

- ab is the product of d and e,

- b is four times e,

- e is seven less than d, and

- c is the sum of a and b.

The Mensa members were asked to solve this problem without the aid of computers. Since this is a programming class, write a computer program to find all such numbers satisfying the above criteria. All such numbers should be written to the screen, one per line.

Commands to compile, link, and run this assignment are shown in Figure 1. Some of the output generated from executing this program has intentionally been removed.

```
1   newuser@csnew ~> cd 1337
2   newuser@csnew ~/1337> mkdir 12
3   newuser@csnew ~/1337> cd 12
4   newuser@csnew ~/1337/12> cp /usr/local/1337/data/12/* .
5   newuser@csnew ~/1337/12> touch lab12.cpp
6   newuser@csnew ~/1337/12> # Edit lab12.cpp
7   newuser@csnew ~/1337/12> g++ -c -g -Wall lab12.cpp
8   newuser@csnew ~/1337/12> g++ -o lab12 lab12.o
9   newuser@csnew ~/1337/12> lab12
10  Your Name - CS 1337 - Lab 12
11
12  18992
13  newuser@csnew ~/1337/12> lab12 > my.out
14  newuser@csnew ~/1337/12> diff 01.out my.out
15  newuser@csnew ~/1337/12>
```

Figure 1. Commands to Compile, Link, & Run Lab 12