Maths 1261 Quiz 1 Friday 4/10/13 answers

(1) Convert 27 (decimal) to binary.

```
27 = 2(13) + 1
13 = 2(6) + 1
 6 = 2(3) + 0
 3 = 2(1) + 1     11011
```

(2) Convert 199 to octal.

```
8 divided into 199 goes 24 rem 7
8               24       3     0
3<8:  307
```

(3) Convert $(72)_8$ to decimal.

```
8(7) + 2 = 58
```

(4) Convert 999 to hexadecimal.

```
16 divided into 999 goes 62 remainder 7
16               62       3          14
3<16: 3e7
```

(5) Convert $(ace)_{16}$ to decimal.

```
14 + 16 * 12 + 256 * 10 = 2766

or

a -> 10
ac -> 10 * 16 + 12 = 172
ace -> 172 * 16 + 14 = 2752 + 14 = 2766
```

(6) Convert 999 to short (short integer).

```
03e7
```

(7) Convert -487 to short.

```
487 to hexadecimal.
16 divided into 487 goes 30 rem  7
16               30       1     14
hex: 1e7

-487:
```

```
 ffff
- 1e7
 ====
 fe18
 +  1
 ----
 fe19  answer
```

(8) Add the results of (6) and (7) as short integers, producing a short (integer) result.

```
03e7
fe19
----
0200
```

(9) Decode the following ASCII character string, using the ASCII table supplied.

```
0a 49 20 64 6f 6e 27 74 20 62 65 6c 69 65 76 65 20 69 74 21 0a 00
```

```
\nI don't believe it!\n
```