# Chapter 16: Bar Codes

This worksheet relates to the two types of bar codes: POSTNET and UPC bar codes.

## POSTNET

Here is the table that lists the method for encoding digits into the POSTNET code.

| Digit | Code | Digit | Code |
|---|---|---|---|
| 1 | ıııll | 6 | ıllıı |
| 2 | ıılıl | 7 | lıııl |
| 3 | ııllı | 8 | lıılı |
| 4 | ılııl | 9 | lılıı |
| 5 | ılılı | 0 | llııı |

The nine-digit zip code is followed by a check digit chosen so that the sum of the digits ends in a zero.

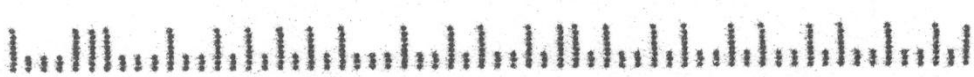
1. Decode the POSTNET bar code and verify that the check digit is correct.

2. The following POSTNET bar code has an error in it. Identify and correct the error.

A *delivery point* is a two-digit code that is added onto the end of the nine-digit zip code. Together, these codes uniquely identify each mailbox in the US. A check digit is then appended as before, creating a 12-digit number.

3. If a POSTNET code represents a zip code with delivery point included, how many total bars will there be in the code?

4. Find the ZIP + 4 and delivery point for the following POSTNET code.

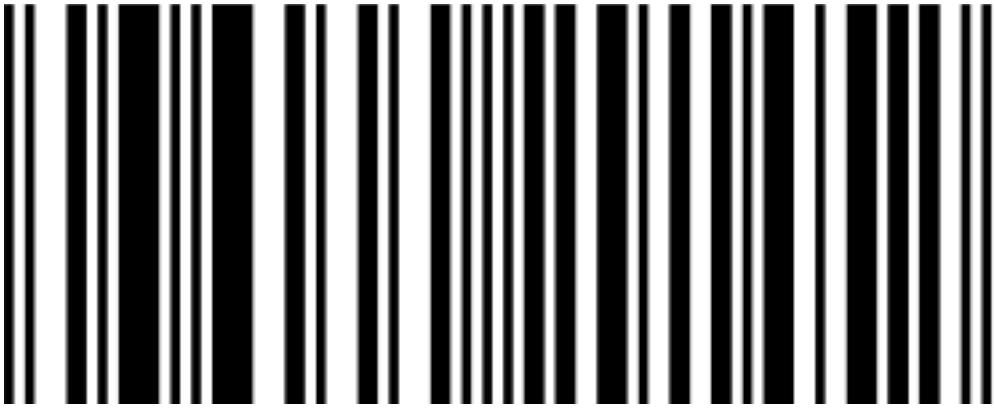


## UPC Bar Code

The table below shows the coding system for UPC bar codes. Remember that 0 represents light and 1 represents dark.

| Digit | Left-side code | Right-side code |
|---|---|---|
| 0 | 0001101 | 1110010 |
| 1 | 0011001 | 1100110 |
| 2 | 0010011 | 1101100 |
| 3 | 0111101 | 1000010 |
| 4 | 0100011 | 1011100 |
| 5 | 0110001 | 1001110 |
| 6 | 0101111 | 1010000 |
| 7 | 0111011 | 1000100 |
| 8 | 0110111 | 1001000 |
| 9 | 0001011 | 1110100 |

5. Decode the UPC bar code shown below, and verify that the check digit is correct.



## Solutions

1. 25964-1877
2. The correct zip code is 00715-3368
3. 62 (including the guard bars)
4. 17257-2299, delivery point 99
5. 0-36000-29145-2