List of Figures

Chapter 1

Tests

1.1 Code set with verbatim

Below is an indented inline code example.

```
    1 + 1
2
    show =: ] NB. Identity, used to display results
    integers =: i. NB. creates array with shape of argument
    NB.                 populated with an incrementing value
    NB.                 starting at 0
    show mat2_3 =: integers 2 3
0 1 2
3 4 5
    from =: { NB. Indexing into an array
    NB.           expressed as a function
    1 from mat2_3
3 4 5
```

In some cases, when the arguments to `f` do not match its function rank, `f` is automatically extended to the appropriate dimensions. For example, if `x` is a scalar, addition can always be extended so that `x` is added to every element of a collection `c` no matter `c`'s rank or shape.

Now an unindented code example.

```
    1 + mat2_3
1 2 3
4 5 6
```

Code in Figures 1.1 through 1.4 illustrates something. More text after the figures. (Not a new paragraph.)

1.2 Math and code set as math

Equation 1.1 is well-known. words

$$E = mc^2 \tag{1.1}$$

Here are examples of code set as unnumbered equations. words

$$(\texttt{sh.:Int.:Int.:Int})$$

words words

```
f ::  (Shape sh, Elt e) => Array (sh :.  Int :.  Int :.  Int) e -> Array sh e
```

```
   100 200 + mat2_3
100 101 102
203 204 205

   NB. agreement: visualizes
   NB. how the cells of each
   NB. collection are paired with each other
   NB. before performing the desired operation
   agreement =: ; "

   NB. Show agreement of two collections above
   NB. under adition
   NB. The shape 2 is the frame;
   NB. the scalars are expanded to
   NB. vectors of 3 to match
   NB. the shape of mat2_3
   100 200 (+ agreement) mat2_3
+---+-+
|100|0|
+---+-+
|100|1|
+---+-+
|100|2|
+---+-+

+---+-+
|200|3|
+---+-+
|200|4|
+---+-+
|200|5|
+---+-+
```

Figure 1.1: A nice caption here. Example continues in Figure 1.2.

```
   mat2_3 + mat2_3
0 2  4
6 8 10
   NB. The frame is 2 3;
   NB. the scalar cells of both collections
   NB. are paired with each other
   mat2_3 (+ agreement) mat2_3
+-+-+
|0|0|
+-+-+
|1|1|
+-+-+
|2|2|
+-+-+

+-+-+
|3|3|
+-+-+
|4|4|
+-+-+
|5|5|
+-+-+
```

Figure 1.2: A nice caption here. Example continued from Figure 1.1, continuing in Figure 1.3.

```
show arr2_3_2 =: integers 2 3 2
 0  1
 2  3
 4  5

 6  7
 8  9
10 11
   arr2_3_2 + mat2_3
 0  1
 3  4
 6  7

 9 10
12 13
15 16
   NB. The frame is 2 3;
   NB. The scalar cells of mat2_3
   NB. are expanded to vectors of 2
   NB. to match the shape of
   NB. arr2_3_2
```

Figure 1.3: A nice caption here. Example continued from Figure 1.2, continuing in Figure 1.4.

```
     arr2_3_2 + agreement mat2_3
+--+-+
|0 |0|
+--+-+
|1 |0|
+--+-+


+--+-+
|2 |1|
+--+-+
|3 |1|
+--+-+


+--+-+
|4 |2|
+--+-+
|5 |2|
+--+-+


+--+-+
|6 |3|
+--+-+
|7 |3|
+--+-+


+--+-+
|8 |4|
+--+-+
|9 |4|
+--+-+


+--+-+
|10|5|
+--+-+
|11|5|
+--+-+
```

Figure 1.4: A nice caption here. Example continued from Figure 1.3.

words words