Task 1

Define the following:

```
tall ← 5 3⍴'T'
wide ← 3 5⍴'W'
long ← 1 5⍴'L'
short ← 1 3⍴'S'
```

Task 2

Using `tall` and `short`, create:

`short_tall`

```
SSS
TTT
TTT
TTT
TTT
TTT
TTT
```

Task 3

Using `tall` and `short`, create:

`tall_short`

```
TTTSSS
TTTSSS
TTTSSS
TTTSSS
TTTSSS
TTTSSS
```

Task 4

Using `long`, `wide`, and `tall`, create:

`tall_long_wide`

```
TTTLLLLL
TTTLLLLL
TTTWWWWW
TTTWWWWW
TTTWWWWW
```

Task 5

Using `short`, `long`, `wide`, and `tall`, create:

```
      all
TTTLLLLL
TTTLLLLL
TTTWWWWW
TTTWWWWW
TTTWWWWW
SSSLLLLL
```

Task 6

Create this list of temperatures in degrees Celsius:

```
        t_C
-40 0 37.78 100 -10 20 -273.15
```

How many temperatures are negative?

```
        cold
3
```

Task 7

For any temperature t_C in Celsius, the corresponding temperature t_F in Fahrenheit is $t_F = \left(\frac{9}{5} t_C\right) + 32$.

Using a single expression, create `t_F` from `t_C`.

```
      t_F
-40 32 100.004 212 14 68 -459.67
```

Task 8

Define the array `prices` to hold the prices of 3 products:

```
      prices
3.50 7.99 4.25
      pprices
3
```

Define `quantities` as a table that tells how many of each product was ordered on each of 5 days:

```
      quantities ← 5 3⍴3 5 0 7
```

Task 9

Using `quantities`, how many products were ordered on each day?

```
quantity_per_day
8 15 10 12 8
```

Using `quantity_per_day`, how many products have been ordered, all in total?

```
total_quantity
53
```

Task 10

For each product how many did we sell in total?

```
quantity_per_product
18 20 15
```

Using `quantity_per_product`, how many did we sell of the product that we sold the most of?

```
most_sold
20
```

Task 11

For each day, how many products did sold at least 1?

```
varieties
2  3  2  2  2
```

On how many days did we sell more than 10 items in total?

```
super_days
2
```

Task 12

Using `prices` and `quantities`, compute the income per product per day:

```
      incomes
10.5 39.95  0
24.5 23.97 21.25
 0   55.93 12.75
17.5  0    29.75
10.5 39.95  0
```

Task 13

Using `incomes`, compute the total income for each day:

```
      total_per_day
50.45 69.72 68.68 47.25 50.45
```

Using `total_per_day`, compute the grand total:

```
      grand_total
286.55
```

Task 14 (bonus task)

Recompute `grand_total` with a single expression that only uses `prices` and `quantities`:

```
grand_total
286.55
```

Task 15 (bonus task)

Create this pattern:

```
        pattern
zzzzzzHHHHzzzzzzHHHH
HHHHzzzzzzHHHHzzzzzz
zzzzzzHHHHzzzzzzHHHH
HHHHzzzzzzHHHHzzzzzz
```

Try to make your code as short as possible!