

Task 1

Define the following:

tall \leftarrow 5 3p'T'
wide \leftarrow 3 5p'W'
long \leftarrow 1 5p'L'
short \leftarrow 1 3p'S'

Task 2

Using `tall` and `short`, create:
`short_tall`

`SSS`

`TTT`

`TTT`

`TTT`

`TTT`

`TTT`

Task 3

Using `tall` and `short`, create:

`tall_short`

`TTTSSS`

`TTTSSS`

`TTTSSS`

`TTTSSS`

`TTTSSS`

Task 4

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

`tall_long_wide`

TTTL LLLL

TTTL LLLL

TTTW WWW

TTTW WWW

TTTW WWW

Task 5

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

all

TTTL LLLL

TTTL LLLL

TTTW WWW

TTTW WWW

TTTW WWW

SSSL LLLL

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`.

							<code>t_F</code>
<code>-40</code>	<code>32</code>	<code>100.004</code>	<code>212</code>	<code>14</code>	<code>68</code>	<code>-459.67</code>	

Task 8

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

```
prices
3.50 7.99 4.25
prices
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 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

```
z z z z z H H H H z z z z z H H H H
H H H H z z z z z H H H H z z z z z
z z z z z H H H H z z z z z H H H H
H H H H z z z z z H H H H z z z z z
```

Try to make your code as short as possible!