Exercise 1

I was reading this article by Tim Urban - Your Life in Weeks

https://waitbutwhy.com/2014/05/life-weeks.html

Create a program that tells us how many days, weeks, months we have left if we live until 90 years old.

It will take your current age as the input and output a message with our time left in this format: "You have x days, y weeks, and z months left."

~ Where x, y and z are replaced with the actual calculated numbers.

Warning your output should match the Example Output format exactly, even the positions of the commas and full stops.

Example Input

`56`

Example Output

```
You have 12410 days, 1768 weeks, and 408 months left.
```

Hint: There are 365 days in a year, 52 weeks in a year and 12 months in a year.

Exercise 2

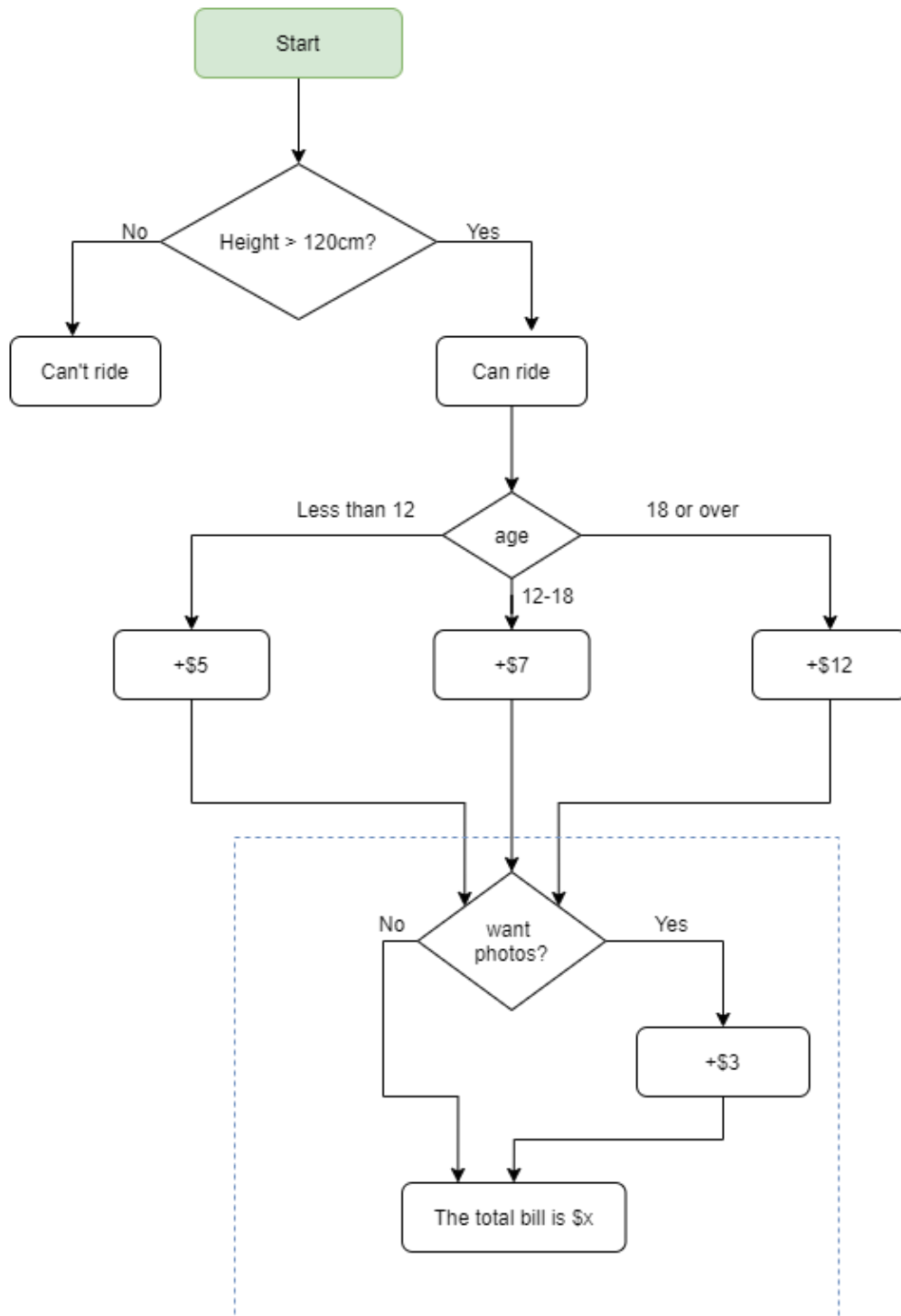Write a program that inputs three different integers from the keyboard, then prints the sum, the average, the product, the smallest and the largest of these numbers. Use only the single-selection form of the `if` statement you learned in this chapter. The screen dialog should appear as follows:

```
Input three different integers: 13 27 14
Sum is 54
Average is 18
Product is 4914
Smallest is 13
Largest is 27
```
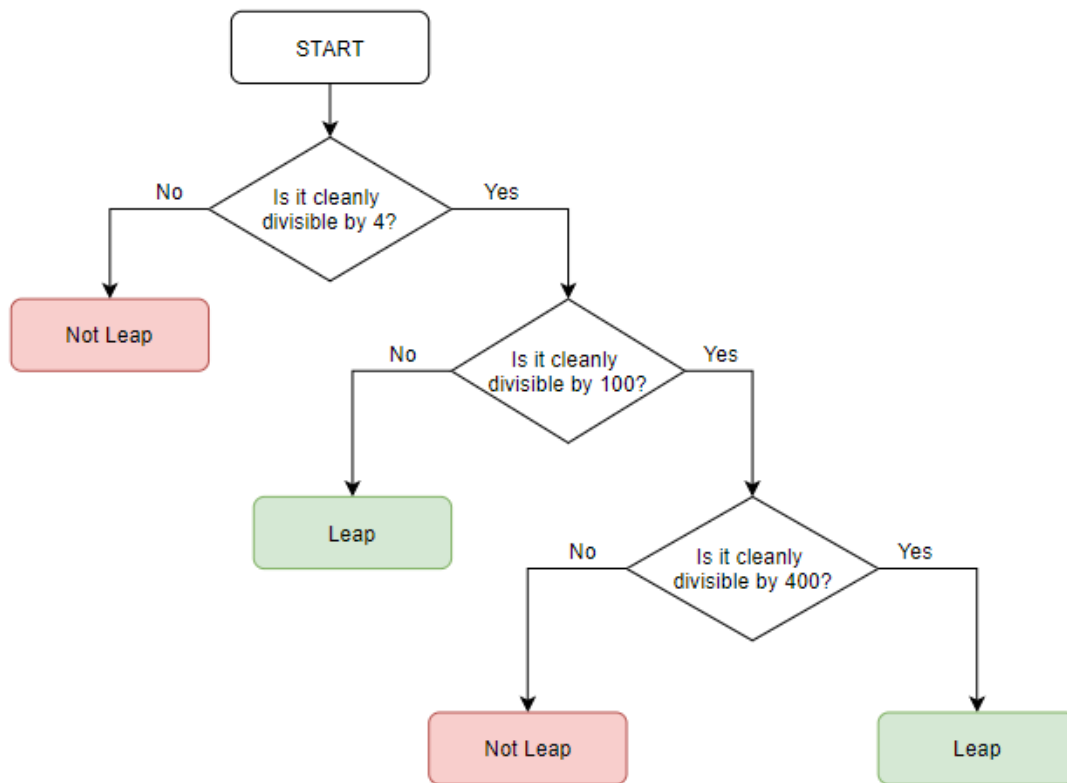
Exercise 3

Implement the following flowchart.

```
                        ┌──────────┐
                        │  Start   │
                        └────┬─────┘
                             │
                             ▼
              No        ╱─────────────╲       Yes
         ┌─────────────  Height > 120cm?  ─────────────┐
         │              ╲─────────────╱                │
         ▼                                             ▼
   ┌───────────┐                              ┌──────────────┐
   │ Can't ride│                              │   Can ride   │
   └───────────┘                              └──────┬───────┘
                                                     │
                                                     ▼
        Less than 12         ╱─────────╲      18 or over
   ┌─────────────────────────   age   ─────────────────────┐
   │                         ╲─────────╱                    │
   │                              │ 12-18                   │
   ▼                              ▼                         ▼
┌───────┐                     ┌───────┐                 ┌───────┐
│  +$5  │                     │  +$7  │                 │ +$12  │
└───┬───┘                     └───┬───┘                 └───┬───┘
    │                             │                         │
    └──────────┐                  │    ┌────────────────────┘
               │                  │    │
    ┌─ ─ ─ ─ ─ │─ ─ ─ ─ ─ ─ ─ ─ ─│─ ─ │─ ─ ─ ─ ─ ─ ─ ─┐
    │          ▼                  ▼    ▼                │
    │     No        ╱──────────╲       Yes             │
    │  ┌───────────   want       ───────────┐          │
    │  │           ╲  photos?  ╱             │          │
    │  │            ╲──────────╱             ▼          │
    │  │                                ┌─────────┐     │
    │  │                                │   +$3   │     │
    │  │                                └────┬────┘     │
    │  ▼                                     │          │
    │  └────────────┐         ┌──────────────┘          │
    │               ▼         ▼                         │
    │          ┌────────────────────────┐               │
    │          │ The total bill is $x   │               │
    │          └────────────────────────┘               │
    └─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─┘
```

Exercise 4

Implement the following flowchart.

What is a leap year?

https://www.youtube.com/watch?v=xX96xng7sAE

Write a program that works out whether if a given year is a leap year. A normal year has 365 days, leap years have 366, with an extra day in February.

This is how you work out whether if a particular year is a leap year.

```
on every year that is evenly divisible by 4 **except** every year that is
evenly divisible by 100 **unless** the year is also evenly divisible by
400
```

e.g. The year 2000: 2000 ÷ 4 = 500 (Leap) // 2000 ÷ 100 = 20 (Not Leap) // 2000 ÷ 400 = 5 (Leap!)
So the year 2000 is a leap year.

But the year 2100 is not a leap year because:
2100 ÷ 4 = 525 (Leap) // 2100 ÷ 100 = 21 (Not Leap) // 2100 ÷ 400 = 5.25 (Not Leap)