

Would it be handy to keep track of "how wide is the angle between the minute hand and hour hand" to describe time? Let's try to write a program that finds the shorter angle between the hour hand and minute hand in an analog clock and see for ourselves.

Calculating degrees

Given H hours and M minutes time:

- Degrees travelled by hour hand would be: $H * (360/12) + M * (360/(12 * 60))$ i.e. $(H * 30 + M * 0.5)$
- Degrees travelled by minute hand would be: $M * (360/60)$ i.e. $M * 6$

Input

The input is of the form:

- HH:MM if $H \geq 10$,
- H:MM if $H < 10$

Time is specified in 24 hour format, that is:

- $0 \leq H \leq 23$
- $0 \leq M \leq 59$

Example

```
5:30
12:00
2:20
9:05
15:45
```

Output

Note: The angle should be displayed with a precision of 2 decimal places.

Example Output

```
The angle between the Hour hand and Minute hand is 15.00 degrees.
The angle between the Hour hand and Minute hand is 0.00 degrees.
The angle between the Hour hand and Minute hand is 50.00 degrees.
The angle between the Hour hand and Minute hand is 117.50 degrees.
The angle between the Hour hand and Minute hand is 157.50 degrees.
```