Calculate the angle between hour hand and minute hand

This problem is know as Clock angle problem where we need to find angle between hands of an analog clock at .

Examples:

```
Input:  h = 12:00, m = 30.00
Output: 165 degree

Input:  h = 3.00, m = 30.00
Output: 75 degree
```

The idea is to take 12:00 (h = 12, m = 0) as a reference. Following are detailed steps.

1) Calculate the angle made by hour hand with respect to 12:00 in h hours and m minutes.
2) Calculate the angle made by minute hand with respect to 12:00 in h hours and m minutes.
3) The difference between two angles is the angle between two hands.

How to calculate the two angles with respect to 12:00?
The minute hand moves 360 degree in 60 minute(or 6 degree in one minute) and hour hand moves 360 degree in 12 hours(or 0.5 degree in 1 minute). In h hours and m minutes, the minute hand would move (h*60 + m)*6 and hour hand would move (h*60 + m)*0.5.

```
// C program to find angle between hour and minute hands
#include <stdio.h>
#include <stdlib.h>

// Utility function to find minimum of two integers
int min(int x, int y) { return (x < y)? x: y; }

int calcAngle(double h, double m)
{
```

```
    // validate the input
    if (h <0 || m < 0 || h >12 || m > 60)
        printf("Wrong input");

    if (h == 12) h = 0;
    if (m == 60) m = 0;

    // Calculate the angles moved by hour and minute han
    // with reference to 12:00
    int hour_angle = 0.5 * (h*60 + m);
    int minute_angle = 6*m;

    // Find the difference between two angles
    int angle = abs(hour_angle - minute_angle);

    // Return the smaller angle of two possible angles
    angle = min(360-angle, angle);

    return angle;
}

// Driver program to test above function
int main()
{
    printf("%d \n", calcAngle(9, 60));
    printf("%d \n", calcAngle(3, 30));
    return 0;
}
```

Output:

```
90
75
```

Exercise: Find all times when hour and minute hands get superimposed.