

## MATH 110-001, QUIZ 5

March 23, 2018

Time: 15 minutes

*Show all your work. No calculators, no books/notes are allowed.*

Name (please print): \_\_\_\_\_

Student number: \_\_\_\_\_

1. Find two positive numbers such that the sum of the first and twice the second is 80 and their product is maximum.

2. Function  $f$  is continuous, differentiable and everywhere concave down and it has a critical point at  $x = 1$ . Choose all the correct options.

- (a)  $f$  has a local minimum at  $x = 1$
- (b)  $f$  has a local maximum at  $x = 1$
- (c)  $f$  has a global minimum at  $x = 1$
- (d)  $f$  has a global maximum at  $x = 1$
- (e)  $f$  has an inflection point at  $x = 1$