## Some problems on IVT

## November 12, 2015

## **Problems**

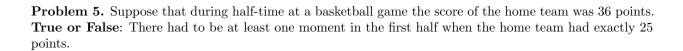
Problem 1.	You	decide to	estimate	$e^2$ by	squaring	longer	and	longer	$\operatorname{decimal}$	approximat	ions o	ρf
e = 2.71828.												

- 1. This is a good idea because e is a rational number.
- 2. This is a good idea because  $y = x^2$  is a continuous function.
- 3. This is a bad idea because e is an irrational number.
- 4. This is a good idea because  $y = e^x$  is a continuous function.

Problem 2. True or false: You were once exactly 3 feet tall.

**Problem 3. True or False**: At some time since you were born your weight in pounds equaled your height in inches.

**Problem 4. True or False**: Along the Equator, there are two diametrically opposite sites that have exactly the same temperature at the same time.



**Problem 6. True or False**:  $x^{100} - 9x^2 + 1$  has a root in [0, 2].