

## **7E Proof by Exhaustion, Counter-Example & Jottings**

1. Prove that all square numbers are either a multiple of 4, or 1 more than a multiple of 4

2. Prove that the following statement is not true:

“The sum of two consecutive prime numbers is always even”

3. Prove that for all positive values of x and y:

$$\frac{x}{y} + \frac{y}{x} \geq 2$$