

# Melbourne University Mathematics Society

## Problem Solving Competition

### Answers

#### Round One

1. 48
2.  $x = 2, y = -1, z = 1$
3. 300
4. 121 or 484 (either)
5. 4

#### Round Three

1.  $\sqrt{180} = 3\sqrt{20} = 6\sqrt{5}$
2. 48
3.  $-i$
4. 4
5. 5

#### Round Two

1.  $\frac{1}{2}$
2. 15
3.  $2^{12} = 8^4 = 4096$
4. 2
5. 48

#### Round Four

1.  $\frac{25}{12} = 2 \frac{1}{12}$
2. 55
3.  $\frac{11!}{(2 \cdot 2 \cdot 2)} = \frac{11!}{8}$
4.  $72\pi$
5. 24