

Elementary Mathematics 6101

Exercise Sheet 1

6 October 2010

Please answer all questions on the sheet.

1. Expand and simplify

$$\begin{array}{llll} a) 3 \cdot (1 + 2) & b) x \cdot (1 + 2) & c) 3 \cdot (2x + x) & d) (1 + 2) \cdot (x + 1) \\ e) (3a)^2 & f) \frac{22ab}{11b} & g) \frac{12m^2}{6m} & h) \frac{36xy}{18x} \end{array}$$

2. Reduce the following down as a fraction and show your working

$$a) 5^{-1} \quad b) 64^{1/6} \quad c) 27^{-1/3} \quad d) \left(\frac{1}{4}\right)^{\frac{3}{2}}$$

3. Factorise the following quadratics

$$a) x^2 - x - 2 \quad b) x^2 - 2x + 1$$

4. Compute the following:

$$a) |-2| \quad b) |0.5| \quad c) 3! \quad d) \frac{100!}{99!}$$

5. Solve the following inequalities:

$$a) 2x - 3 > 0$$

$$b) 2 - x < 1$$