1.   [2 *points*]

Evaluate:

(a) 3^{-3} (b) $8^{\frac{5}{3}}$

2.   [4 *points*]

Write as a power of 2 (part a) or 3 (part b):

(a) $\dfrac{4^{-3} \times \left(\frac{1}{8}\right)^{-2}}{(4\sqrt{2})^3 \times 2^{\frac{1}{2}}}$ (b) $\dfrac{27^{\frac{1}{3}} \times (81)^{-1}}{\left(\frac{1}{3}\right)^3 \times 9^{\frac{1}{4}}}$

3.   [4 *points*]

Calculate:

(a) $\dfrac{16^{-\frac{1}{4}} \times (3\sqrt{3})^{-2}}{100^{\frac{1}{2}} \times \left(\frac{1}{2}\right)^3}$ (b) $\dfrac{\sqrt{2\frac{1}{4}} \times (\sqrt[4]{2})^8}{\left(\frac{16}{25}\right)^{-\frac{1}{2}} \times 0.2^{-1}}$

4.   [2 *points*]

Calculate, giving your answer in standard form:

(a) $2.53 \times 10^{11} - 4.11 \times 10^{10}$ (b) $9.34 \times 10^{-14} + 8.21 \times 10^{-15}$