Section 2.4 Extra Practice

1. i) Estimate, **ii)** then calculate, the number that has the given square root.

    a) 4.4   **(i)** 4^2 = _____

                          5^2 = _____

                          4.4^2 ≈ _____

               (ii) 4.4^2 = _____

    b) 11.7   **(i)** 11^2 = _____

                          12^2 = _____

                          11.7^2 ≈ _____

              (ii) 11.7^2 = _____

    c) 0.78   **(i)** 0.7^2 = _____

                          0.8^2 = _____

                          0.78^2 ≈ _____

              (ii) 0.78^2 = _____

    d) 10.3   **(i)**   _____   = _____

                          _____   = _____

                          _____   ≈ _____

              (ii) _____   = _____

2. Estimate (i), then calculate (ii), the area of each square, given its side length. Remember to include the units in each summary statement.

    a) 2.3 cm   **(i)** 2^2 = _____

                            3^2 = _____

                            2.3^2 ≈ _____ An estimate for area of the square is _____.

              (ii) 2.3^2 = _____ The area of the square is _____.

b) 8.9 m   **(i)** $(8 \text{ m})^2$ = _____

   $(9 \text{ m})^2$ = _____

   $(8.9 \text{ m})^2$ ≈ _____   An estimate for area of the square is _____.

   (ii) $(8.9 \text{ m})^2$ = _____   The area of the square is _____.

c) 0.52 mm   **(i)** $(0.5 \text{ mm})^2$ = _____

   $(0.6 \text{ mm})^2$ = _____

   $(0.52 \text{ mm})^2$ ≈ _____   An estimate for area of the square is _____.

   (ii) $(0.52 \text{ mm})^2$ = _____   The area of the square is _____.

d) 0.086 km   **(i)** $(0.08 \text{ km})^2$ = _____

   $(0.09 \text{ km})^2$ = _____

   $(0.086 \text{ km})^2$ ≈ _____   An estimate for area of the square is _____.

   (ii) $(0.086 \text{ km})^2$ = _____   The area of the square is _____.

3. Determine whether each rational number is a perfect square. If it is a perfect square, write the product as an expression of two equal rational factors.

a) 0.9   YES   NO   _____   **e)** $\dfrac{1}{10}$ YES   NO   _____

b) $\dfrac{1}{4}$ YES   NO   _____   **f)** 1.44   YES   NO   _____

c) $\dfrac{25}{9}$ YES   NO   _____   **g)** 0.0001   YES   NO   _____

d) 0.81   YES   NO   _____   **h)** $\dfrac{1}{100}$ YES   NO   _____

4. Evaluate. Show your work.

   a) $\sqrt{256}$ **b)** $\sqrt{3.61}$

   c) $\sqrt{1225}$ **d)** $\sqrt{0.0484}$

5. Calculate the side length of each square from its area. Show your work.

   a) 1.21 cm^2 **b)** 625 m^2

   c) 0.09 mm^2 **d)** 0.36 km^2

6. (i) Estimate, **(ii)** then calculate, each square root to the specified number of decimal places.

Example: $\sqrt{56}$ to the nearest hundredth

i) $\sqrt{49}$ 7 , $\sqrt{64}$ 8 , $\sqrt{56}$ 7.5   **ii)** 7.48

a) $\sqrt{83}$ to the nearest tenth

i) _____   **ii)** _____

b) $\sqrt{5.6}$ to the nearest hundredth

i) _____   **ii)** _____

c) $\sqrt{0.91}$ to the nearest thousandth

i) _____   **ii)** _____

7. A square lot has an area of 0.5 ha. What are the lot's dimensions to the nearest metre? Show your work. **Hint:** 1 ha = 10 000 m^2

8. Find the difference between the square of 9 and the square root of 9. Show your work.