1 A sequence of numbers if formed by the iterative process

$$u_{n+1} = \sqrt{\frac{u_n}{10} + 2} \qquad\qquad u_1 = 42.5$$

Work out the values of u_2 and u_3 **[2 marks]**

$u_2 = $ _____

$u_3 = $ _____

2 A sequence of numbers if formed by the iterative process

$$u_{n+1} = \frac{(u_n)^2 + 3}{5} \qquad\qquad u_1 = \sqrt{3}$$

Work out the values of u_2 and u_3 **[2 marks]**

$u_2 = $ _____

$u_3 = $ _____

$\frac{}{4}$

3 A sequence of numbers if formed by the iterative process

$$u_{n+1} = \sqrt{80 - 5u_n} \qquad\qquad u_1 = 12.8$$

Work out the values of u_2 and u_3 **[2 marks]**

$u_2 = $ _____

$u_3 = $ _____

4 A sequence of numbers if formed by the iterative process

$$u_{n+1} = 4u_n - (u_n)^2 \qquad\qquad u_1 = 0.3$$

Work out the values of u_2 and u_3 **[2 marks]**

$u_2 = $ _____

$u_3 = $ _____

5   An approximate solution to an equation is found using the iterative formula

$$x_{n+1} = \sqrt[3]{x_n + 4} \qquad \text{with} \quad x_1 = 2$$

5 (a)   Work out the values of x_2 and x_3
Write down all the figures on your calculator display.   **[2 marks]**

$x_2 = $ _____

$x_3 = $ _____

5 (b)   Work out the solution to the equation to 5 decimal places.   **[1 mark]**

$x = $ _____

7

Turn over ▶

6   An approximate solution to an equation is found using the iterative formula

$$x_{n+1} = \sqrt{13 - x_n} \qquad \text{with} \quad x_1 = 3$$

6 (a)   Work out the values of x_2 and x_3
Write down all the figures on your calculator display.   **[2 marks]**

$x_2 = $ _____

$x_3 = $ _____

6 (b)   Work out the solution to the equation to 3 decimal places.   **[1 mark]**

$x = $ _____

7 An approximate solution to an equation is found using the iterative formula

$$x_{n+1} = \frac{(x_n)^2 + 6}{10} \qquad \text{with} \quad x_1 = 1$$

7 (a) Work out the values of x_2 and x_3 **[2 marks]**

$x_2 = $ _____

$x_3 = $ _____

7 (b) Work out the solution to the equation to 4 decimal places. **[1 mark]**

$x = $ _____

8 An approximate solution to an equation is found using the iterative formula

$$x_{n+1} = 10 - \sqrt{\frac{8}{x_n}}$$ with $x_1 = 2$

8 (a) Work out the values of x_2 and x_3 **[2 marks]**

$x_2 =$ _____

$x_3 =$ _____

8 (b) Work out the solution to the equation to 5 decimal places. **[1 mark]**

$x =$ _____

3