

Q1

$$1 - 2x + 3x^2 - 4x^3$$

Q2

$$\frac{1}{2} - \frac{3}{8}x + \frac{27}{64}x^2 - \frac{135}{256}x^3$$

$$b/ \quad |x| < \frac{2}{3}$$

Q3

$$2 + x - \frac{1}{2}x^2 + \frac{5}{12}x^3$$

$$b/ \quad |x| < \frac{2}{3}$$

Q4

$$1 + \frac{2}{3}x - \frac{4}{9}x^2 + \frac{40}{81}x^3$$

$$|x| < \frac{1}{2}$$

$$= 1.03228 \quad (5dp)$$

Q5

$$\frac{1}{4} - \frac{3}{4}x + \frac{27}{16}x^2 \quad \cancel{+x^3}$$

$$b/ \quad |x| < \frac{2}{3}$$

Q6

$$\sqrt{3} + \frac{\sqrt{3}}{3}x - \frac{\sqrt{3}}{18}x^2 + \frac{\sqrt{3}}{54}x^3$$

$$b/ \quad |x| < \frac{3}{2}$$

$$\sqrt{5} = 2.236 \quad (3dp)$$

Q7

$$1 - 9x + 54x^2 - 270x^3$$

$$b) |x| < \frac{1}{3}$$

$$1 - 7x + 36x^2 - 162x^3$$

Q8

$$3 - \frac{1}{3}x - \frac{1}{54}x^2 - \frac{1}{486}x^3$$

$$b) |x| < \frac{9}{2}$$

$$\underline{\underline{2.9833}}$$