Assignment 1 Test version O

1 Simplify $\frac{3a}{4b} \div \frac{2a^2}{8b^4}$

2 Solve $3\cos\theta + 1 = 0$ for $0 \le \theta \le 360^o$ giving your answers to 3 significant figures

3 Find $\frac{\mathrm{d}y}{\mathrm{d}t}$ if $y = t^2(2a + t)$ where *a* is a constant

4 Solve the equation $\frac{1}{x-1} = \frac{3}{x+1} - \frac{1}{4}$

Assignment 1 Test version P

1 Simplify $\frac{4x}{y} \times \frac{y^2}{8x^3}$

2 Solve $3\sin\left(\theta + \frac{\pi}{2}\right) - 1 = 0$ for $-\pi \le \theta \le \pi$ giving your answers to 3 significant figures

3 Find $\frac{\mathrm{d}A}{\mathrm{d}h}$ if $A = \frac{h^2 + 3\sqrt{h}}{4h}$

4 Solve the equation $\frac{1}{x-1} = \frac{3}{x+1} + 2$ (Give exact answers)

Assignment 1 Test version Q

1 Simplify $\frac{3}{4x} + \frac{2}{5x}$

2 Solve $1 - \tan 2\theta = 0$ for $-\pi \le \theta \le \pi$ giving your answers in terms of π

3 Find $\frac{\mathrm{d}V}{\mathrm{d}t}$ if $V = \frac{t^2 - 4}{t + 2}$

4 Solve the equation $\frac{1}{x-1} = \frac{5}{x+1} + 1$ (Give exact answers)

Assignment 1 Test version R

1 Simplify $\frac{3}{4x} + \frac{2}{5x} - \frac{7}{x}$

2 Solve $1 - \tan 2\theta = 0$ for $-\pi \le \theta \le \pi$ giving your answers in terms of π

3 Find $\frac{\mathrm{d}V}{\mathrm{d}t}$ if $V = \frac{(t^2-4)(t-1)}{t^2+t-2}$

4 Solve the equation $\frac{1}{x-1} = \frac{7}{x+1} - \frac{1}{11}$ (Give exact answers)

Answers version O

1 $\frac{3b^3}{a}$

2 109^o, 251^o

3 $4at + 3t^2$

4 x = 3 or x = 5

Answers version P

1 $\frac{y}{2x^2}$

2 –1.23, 1.23

3 $\frac{1}{4} - \frac{3}{8}h^{-\frac{3}{2}}$

4 $x = -\frac{1}{2} \pm \frac{\sqrt{13}}{2}$

Answers version Q

1 $\frac{23}{20x}$

2 $-\frac{3\pi}{8}, -\frac{7\pi}{8}, \frac{\pi}{8}, \frac{5\pi}{8}$

3 1

4 $-2 \pm \sqrt{11}$

Answers version R

1 $-\frac{117}{20x}$

2 $-\frac{3\pi}{8}, -\frac{7\pi}{8}, \frac{\pi}{8}, \frac{5\pi}{8}$

3 1

4 $33 \pm \sqrt{1002}$