

Name: *Solution*

Student Number:

Problem 1

Expand and simplify

$$(5\sqrt{2} - 3)(5\sqrt{2} + 3) = 25 \times 2 - 9 = 41$$

Problem 2If $f(x) = x^2 + 1$, evaluate $\frac{f(1+h) - f(1)}{h}$.

$$f(1) = 2$$

$$f(1+h) = (1+h)^2 + 1 = h^2 + 2h + 2$$

$$\frac{f(1+h) - f(1)}{h} = \frac{h^2 + 2h + 2 - 2}{h} = \frac{h(h+2)}{h} = h+2$$

Problem 3

Simplify:

$$\begin{aligned} \frac{3x}{x-1} + \frac{7}{x+2} &= \frac{3x(x+2) + 7(x-1)}{(x-1)(x+2)} = \frac{3x^2 + 6x + 7x - 7}{(x-1)(x+2)} \\ &= \frac{3x^2 + 13x - 7}{(x-1)(x+2)} \end{aligned}$$

Problem 4

What are your expectations for this course?