

Problem 1 Simplify the following expression

[/ 6 marks]

1) $\frac{\sqrt{72} + \sqrt{18}}{\sqrt{81}}$

2) $\frac{(2 + \sqrt{2})^2 - (2 - \sqrt{2})^2}{2}$

Problem 2 Solve the second degree equations

[/ 6 marks]

using either the determinant or the method of 'completing the square'

1) $2x^2 - 3x - 2 = 0$

2) $3x^2 - 19x + 6$

Problem 3 Solve the following logarithmic equations

[/ 12 marks]

1) $2\log_4(x - 1) = \log_4(16)$

2) $\log_2(x - 4) + \log_2(x + 4) = 3$

3) $\log_4((x - 2)^2) = 3$

4) $\log_7(14x) - \log_7(x - 5) = 2$

5) $\log_3^2(x) - 7\log_3(x) + 6 = 0$

6) $\log_2(2x^2 - 3x + 2) = 2$

Problem 4 Solve the following equations

[/ 4 marks]

1) $\frac{4^{2-\frac{x}{2}}}{8} = 8$

2) $\sqrt{2^{x-8}} = 32^{x+1}$

tot:

/ 28 marks
