Dr Halbeisen*

Modules 110PMA003 & 110PMA107

Department of Pure Mathematics

Week 6, 2001

The pdf-file you may download from
`http://www.math.berkeley.edu/~halbeis/4students/zero.html`

Please hand in your solutions (stapled together with your full name on the first page) at the lecture on Thursday, 8 November 2001.

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24. Determine the gradients and the vertical intercepts of the following straight lines:

    (a) $2y = -8x + 6$ (b) $3x + 6y = 17$ (c) $x - y = 4$

    Hint: Write the equations in the form $y = mx + c$.

25. Write down the equation of the straight line that:

    (a) has gradient -8 and vertical intercept -2,

    (b) has gradient -3 and passes through $(1, 0)$,

    (c) passes through $(2, -3)$ and $(1, 4)$,

    (d) has vertical intercept -8 and passes through $(4, 2)$.

26. Solve each of the following quadratic equations:

    (a) $x^2 - 3x + 2 = 0$ (b) $8x^2 - 32x = -32$ (c) $3x^2 - 1 = 5x^2 - 3x$

27. Solve the following:

    (a) $\dfrac{1}{x-2} + (x+2) = 2$ (b) $\dfrac{1}{x} + \dfrac{1}{x-1} = \dfrac{3}{2}$

28. Show that real solutions of

$$kx^2 + 2x - (k-2) = 0$$

    can be found for any real number k.

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Office hours (Room 1007): Monday 1 pm–2 pm, Wednesday 2 pm–3 pm