PLOTTING QUADRATICS

Answer all of these questions. Remember to show your working out in all questions.

MAIN QUESTIONS

1. $x^2 + 5x + 6$ | $(x+2)(x+3)$
2. $x^2 - 2x - 8$ | $(x-4)(x+2)$

3. $2x^2 + 7x + 3$ | $(2x+1)(x+3)$
4. $x^2 + 4x + 3 = 0$ | $x = -1, x = -3$

5. $x^2 - 9x + 20 = 0$ | $x = 4, x = 5$
6. $3x^2 - 4x - 4 = 0$ | $x = 2, x = -2/3$

7. $x^2 + 2x - 5 = 0$ | $x = -1 \pm \sqrt{6}$
8. $2x^2 - 6x + 1 = 0$ | $x = (3 \pm \sqrt{7})/2$

9. $x^2 - 6x + 4 = 0$ | $x = 3 \pm \sqrt{5}$
10. $y = x^2 - 4x + 4$ | $(2, 0)$

11. $y = x^2 + 8x + 7$ | $(-4, -9)$
12. $y = -x^2 + 2x + 3$ | $(1, 4)$

13. $y = 3x^2 - 12x + 5$ | $(2, -7)$
14. $y = -2x^2 + 4x - 1$ | $(1, 1)$

15. $x^2 + 10x + 16$ | $(x+8)(x+2)$
16. $4x^2 - 9$ | $(2x-3)(2x+3)$

17. $x^2 - x - 12 = 0$ | $x = 4, x = -3$
18. $5x^2 + 11x + 2 = 0$ | $x = -1/5, x = -2$

19. $3x^2 + 5x - 2 = 0$ | $x = 1/3, x = -2$
20. $x^2 - 8x + 11 = 0$ | $x = 4 \pm \sqrt{5}$

21. $y = x^2 - 10x + 24$ | $(5, -1)$
22. $y = -4x^2 + 4x + 3$ | $(0.5, 4)$

23. $x^2 + 6x - 7$ | $(x+7)(x-1)$
24. $2x^2 - 3x - 5 = 0$ | $x = 5/2, x = -1$

25. $y = 2x^2 + 12x + 13$ (-3, -5)

MASTER QUESTIONS

M1. The product of two consecutive integers is 72. Find the integers.   8 and 9 or -9 and -8

M2. A rectangle has area 48 cm^2 with length 2 cm greater than width. Find its dimensions.   width = 6 cm, length = 8 cm

M3. A projectile's height h metres at t seconds is $h = 30t - 5t^2$. Find maximum height.   45 metres

M4. The sum of squares of two consecutive even integers is 100. Find the integers.   6 and 8 or -8 and -6

M5. A right-angled triangle has hypotenuse 15 cm and one leg 3 cm longer than the other. Find both legs.   9 cm and 12 cm