ALL PROBLEMS (ON SEPARATE PAPER)

NAME_____ DATE_____ SCORE_____

Factoring Quadratic Polynomials

Factor completely. If the polynomial is prime, say so.

1. $b^2 + 8b + 15$ _____
2. $x^2 - 5x + 4$ _____
3. $y^2 + 4y - 5$ _____
4. $a^2 - a - 6$ _____
5. $3 - 4c + c^2$ _____
6. $z^2 + 4z - 12$ _____
7. $m^2 + 3m - 2$ _____
8. $6 - 5e - e^2$ _____
9. $10 - 3d - d^2$ _____
10. $n^2 - 3n + 4$ _____
11. $2g^2 - 8g - 24$ _____
12. $60 - 5h - 5h^2$ _____
13. $45 + 24n + 3n^2$ _____
14. $2k^2 + 2k - 60$ _____
15. $p^3 - 4p^2 - 5p$ _____
16. $20r + 6r^2 - 2r^3$ _____
17. $2a^2 + 5a - 3$ _____
18. $6b^2 + b - 2$ _____
19. $9s^2 + 6s - 8$ _____
20. $10t^2 - 19t + 6$ _____
21. $30 - 13c - 10c^2$ _____
22. $6d^2 + 35d - 6$ _____
23. $u^2 - uv - 12v^2$ _____
24. $6x^2 - 5xy + y^2$ _____
25. $12x^2 + 12x - 45$ _____
26. $18y^2 + 54y + 28$ _____
27. $6m^3 - 19m^2 + 15m$ _____
28. $20n^3 - 32n^2 + 12n$ _____
29. $20e^4 - 23e^3 + 6e^2$ _____
30. $12f^3 - 14f^2 - 40f$ _____

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Solving Polynomial Equations

Solve. Identify all double roots.

1. $z^2 + 2z - 15 = 0$ _____
2. $a^2 + 3a = -2$ _____
3. $b^2 = 12(b - 3)$ _____
4. $y(y - 1) = 6y$ _____
5. $r^2 + 2 = 11$ _____
6. $7u + 10 = -u^2$ _____
7. $3x^2 + 6x + 3 = 0$ _____
8. $s^2 - 3 = -2s$ _____
9. $6(1 + c) = c - c^2$ _____
10. $v(v - 2) = 15$ _____
11. $3h^2 - 4h + 1 = 0$ _____
12. $5d^2 = 2d$ _____
13. $10t^2 - 3t - 1 = 0$ _____
14. $12m^2 + 7m = -1$ _____
15. $3e(3e - 1) = 2$ _____
16. $20k^2 + 5 = 29k$ _____
17. $9(w^2 + 1) = 9 - w$ _____
18. $25n^2 = 10n - 1$ _____
19. $10a^2 = 3(7a - 3)$ _____
20. $6(z^2 + 1) = -13z$ _____
21. $(x + 1)^2 = 2x + 1$ _____
22. $5b^2 - 12 = 17b$ _____
23. $10m(m + 2) + 2(m + 1) = m$ _____
24. $24r = 5(r^2 - 1)$ _____
25. $8s^2 - 13s = -\frac{3}{2}$ _____
26. $8(c^3 - c) = c(6c + 1)$ _____
27. $(x - 1)(x^2 - x - 6) = 0$ _____
28. $(t - 2)(6t^2 + 2t - 4) = 0$ _____