Name _____ Date _____

7.6 Factoring $ax^2 + bx + c$ DAY TWO WS

1–12, factor the polynomial. Show all work for full credit.

1. $6x^2 - 12x - 18$

2. $5x^2 - 15x - 50$

3. $9x^2 - 36x + 27$

4. $2x^2 + 2x - 4$

5. $6x^2 - 7x - 20$

6. $2x^2 - 5x - 3$

7. $4x^2 + 21x - 18$

8. $2x^2 - 13x - 45$

9. $3x^2 + 22x - 16$

10. $-2p^2 + 7p - 6$

11. $-5v^2 + 31v - 6$

12. $-6v^2 - 11v - 4$

13. Describe and correct the error in factoring the polynomial.

$$\times \quad -2t^2 + 13t - 15 = (2t + 3)(t + 5)$$

14 – 15: Solve the equation. Show all your work for full credit.

14. $4x^2 - 4x - 24 = 0$

15. $3p^2 - 5p - 28 = 0$

16. The height *h* (in feet) above the water of a cliff diver is modeled by $h = -16t^2 + 10t + 26$, where *t* is the time (in seconds). How long is the diver in the air? (HINT: units)

17 – 28: Factor the polynomial.

17. $5x^2 - 5x - 30$

18. $8x^2 - 16x - 192$

19. $6x^2 + 48x + 42$

20. $2x^2 + 17x - 9$

21. $12p^2 - 7p - 10$

22. $10w^2 + 24w + 8$

23. $3y^2 + y - 14$

24. $12j^2 - 32j + 5$

25. $15d^2 + 16d - 15$

26. $-9v^2 - 22v - 8$

27. $-14m^2 + 13m - 3$

28. $-20q^2 + 56q - 15$

29. Describe and correct the error in factoring the polynomial.

$\times$ $6x^2 - 4x + 2 = (2x - 2)(3x + 1)$

30 – 31: Solve the equation.

30. $-12w^2 + 20w - 3 = 0$

31. $18t^2 - 2 = 5t$

32. The length of a rectangular patio is 8 feet less than twice its width. The area of the patio is 280 square feet. Find the dimensions of the patio.

33. For what values of t can $6x^2 + tx + 25$ be written as the product of two binomials?

34 – 35: Factor the polynomial.

34. $-10r^2 - 11sr + 6s^2$

35. $12x^3 + 8x^2y - 20xy^2$