Big Old Factoring Packet

Solve each equation by using the zero product property.

1) $(b - 4)(3b - 1) = 0$

2) $(n + 3)(6n + 1) = 0$

3) $(r + 5)(r - 3) = 0$

4) $(v + 8)(2v - 5) = 0$

5) $(8b + 1)(b + 8) = 0$

6) $(3p - 5)(p - 2) = 0$

7) $(2x + 1)(7x + 5) = 0$

8) $(3x - 5)(3x + 1) = 0$

9) $(x - 2)(x + 3) = 0$

10) $(n + 7)(n + 4) = 0$

Solve each equation by factoring, then using the zero product property.

11) $n^2 + 2n - 8 = 0$

12) $p^2 - 9p + 20 = 0$

13) $x^2 - 11x + 28 = 0$

14) $x^2 - 10x + 21 = 0$

15) $n^2 + 13n + 42 = 0$

16) $k^2 + 4k - 21 = 0$

17) $n^2 + 15n + 56 = 0$

18) $x^2 - x - 2 = 0$

19) $x^2 - 5x - 6 = 0$

20) $a^2 - 9a + 18 = 0$

Solve each equation by factoring. First you must factor out a common monomial factor, then factor the the remaining trinomial. Finally, apply the zero product property.

21) $5x^2 - 5x - 150 = 0$

22) $2p^2 + 10p - 48 = 0$

23) $6m^2 - 48m + 90 = 0$

24) $6x^2 + 60x + 126 = 0$

25) $3x^2 + 18x - 21 = 0$

26) $3n^2 + 42n + 144 = 0$

27) $3n^2 + 9n - 120 = 0$

28) $3a^2 + 9a - 12 = 0$

29) $6x^2 - 54x + 120 = 0$

30) $7k^2 + 77k + 168 = 0$

Solve each equation by factoring. First, set your equation equal to zero. Then you must factor out a common monomial factor, then factor the the remaining trinomial. Finally, apply the zero product property.

31) $3n^2 - 6n - 7 = 2$

32) $3x^2 + 6x + 1 = -2$

33) $2b^2 - 2b - 10 = 2$

34) $2r^2 + 8r + 3 = -3$

35) $2a^2 + 6a + 2 = -2$

36) $2a^2 + 8a + 6 = -2$

37) $3v^2 - 9v + 9 = 3$

38) $3x^2 - 6x - 12 = -3$

39) $2x^2 - 6x + 1 = -3$

40) $2n^2 - 4n - 1 = -3$

Solve each equation by factoring.

41) $n^2 - 2n = 15$

42) $k^2 + 5k = 14$

43) $p^2 + 10 = 7p$

44) $8x^2 + 40 = 48x$

45) $3x^2 = -15x + 18$

46) $m^2 - 5 = -4m$

47) $v^2 + 6 = -5v$

48) $n^2 - 8 = 7n$

49) $r^2 + 12 = -7r$

50) $b^2 = 48 - 2b$

51) $5x^2 + 9x - 18 = 0$

52) $5r^2 + 34r + 24 = 0$

53) $10x^2 - 29x + 21 = 0$

54) $3p^2 + 17p - 28 = 0$

55) $2m^2 - 15m + 18 = 0$

56) $2n^2 + 11n - 40 = 0$

57) $21v^2 + 55v + 14 = 0$

58) $3n^2 - 10n - 48 = 0$

Factor each completely.

59) $n^2 - 25$

60) $n^2 - 16$

61) $25x^2 - 1$

62) $9x^2 - 4$