



ACT COMPASS Preparation Worksheet

Algebra: Factoring Polynomials

- $x^3 + x^2 + x$
 $x(x^2 + x + 1)$
- $15a + 12b + 6c$
 $3(5a + 4b + 2c)$
- $8x^2 - 18y^2$
 $2(2x + 3y)(2x - 3y)$
- $x^2y + 2y$
 $y(x^2 + 2)$
- $z^3 + 4z^2$
 $z^2(z + 4)$
- $4x^2 - 4x$
 $4x(x - 1)$
- $15x^2 - 50x - 10$
 $5(3x^2 - 10x - 2)$
- $121a - 11b$
 $11(11a - b)$
- $64c^3 - 56c^2 + 88c$
 $8c(8c^2 - 7c + 11)$
- $10 - 10n + 10n^2$
 $10(1 - n + n^2)$
- $18k + 36k^2 + 9k^3$
 $9k(2 + 4k + k^2)$
- $33q^3 + 33q^2r + 33qr^2$
 $33q(q^2 + qr + r^2)$
- $18kxy - 4xy + 2k^2xy$
 $2xy(9k + 2 + k^2)$
- $x^2 + 2x + 1$
 $(x + 1)(x + 1)$
- $x^2 + 2xy + y^2$
 $(x + y)(x + y)$
- $3x^2 + 7xy + 4y^2$
 $(x + y)(3x + 4y)$
- $x^2 - 4x - 45$
 $(x + 5)(x - 9)$
- $x^2 + 9x - 22$
 $(x - 2)(x + 11)$
- $x^2 - 5x + 6$
 $(x - 3)(x - 2)$
- $x^2 - 2x + 1$
 $(x - 1)(x - 1)$
- $x^2 - 10x + 25$
 $(x - 5)(x - 5)$
- $x^2 - 3xy + 2y^2$
 $(x - y)(x - 2y)$
- $9x^2 + 46x + 5$
 $(9x + 1)(x + 5)$
- $4x^2 + 28x + 49$
 $(2x + 7)(2x + 7)$
- $42x^2 + 43x - 7$
 $(6x + 7)(7x - 1)$
- $6x^2 - 13xy + 6y^2$
 $(2x - 3y)(3x - 2y)$



27. $x^4 - 2x^2 - 3$
 $(x^2 + 1)(x^2 - 3)$
28. $x^4 - x^2y^2 - 2y^4$
 $(x^2 + y^2)(x^2 - 2y^2)$
29. $4x^2 - 16$
 $4(x + 2)(x - 2)$
30. $16 - k^2$
 $(4 + k)(4 - k)$
31. $49 - 64x^2$
 $(7 - 8x)(7 + 8x)$
32. $25z^4 - 1$
 $(5z + 1)(5z - 1)$
33. $x^2 - 1$
 $(x + 1)(x - 1)$
34. $100y^6 - 100$
 $100(y^3 + 1)(y^3 - 1)$
35. $81x^2 - 25$
 $(9x + 5)(9x - 5)$
36. $-100 + 4z^2$
 $4(x + 5)(x - 5)$
37. $x^2y^2 - 4$
 $(xy + 2)(xy - 2)$
38. $x^3 - x$
 $x(x - 1)(x + 1)$
39. $x^3 + 5x^2 + 6x$
 $x(x + 2)(x + 3)$
40. $4y^2 - 8y - 60$
 $4(y + 3)(y - 5)$
41. $3q^2 - 12q + 12$
 $3(q - 2)(q - 2)$
42. $3m^3 + 33m^2 + 90m$
 $3m(m + 5)(m + 6)$
43. $4x^2 + 8xy + 4y^2$
 $4(x + y)(x + y)$
44. $4kx^2 - 4ky^2$
 $4k(x + y)(x - y)$
45. $m^4 - 1$
 $(m^2 + 1)(m + 1)(m - 1)$
46. $p^4 - 2p^2 + 1$
 $(p - 1)^2(p + 1)^2$
47. $abc^2 + 6abc + 5ab$
 $ab(c + 1)(c + 5)$
48. $24x^2 + 68x + 48$
 $4(2x + 3)(3x + 4)$
49. $4x^2y + 12xy^2 + 9y^3$
 $y(2x + 3y)(2x + 3y)$
50. $3mx^2 - 5mx - 28m$
 $m(3x + 7)(x - 4)$