

MCR3U

1.3 Factoring Worksheet

Fully factor each of the following if possible

1. $x^2+7x+12$
2. $x^2+4x-12$
3. $x^2-12x+35$
4. $18x^2+29x+3$
5. $14a^2-3ab-2b^2$
6. $6m+12n+2$
7. $m^2+11m+28$
8. $22t^2+13t+1$
9. $8x^2+38x+45$
10. x^2-81
11. $(x+y)^2-25$
12. $3q^2-6q-45$
13. $7r-14r^2$
14. $x^2-2x-15$
15. k^4-16

Solutions:

1. $(x+3)(x+4)$
2. $(x+6)(x-2)$
3. $(x-7)(x-5)$
4. $(9x+1)(2x+3)$
5. $(2a-b)(7a+2b)$
6. $2(3m+6n+1)$
7. $(m+4)(m+7)$
8. $(11t+1)(2t+1)$
9. $(4x+9)(2x+5)$
10. $(x+9)(x-9)$
11. $(x+y+5)(x+y-5)$
12. $(3(q-5)(q+3)$
13. $7r(1-2r)$
14. $(x-5)(x+3)$
15. $(k^2+4)(k+2)(k-2)$

16. x^2-2x-8
17. $x(2x+1)-4(2x+1)$
18. $y(y-3)+2(3-y)$
19. $24x^2+8x-10$
20. $24n^2-6$
21. $4x^3y^2+8x^2y-36xy^2$
22. $x^2+xy-12y^2$
23. $6x^2-27x-15$
24. $4x^2+12xy+9y^2$
25. $x^2+6xy^2+9y^4$
26. $15-44x-20x^2$
27. $2x-4y$
28. $3x(m-n)-(n-m)$
29. $12x^2+17x+6$
30. $36m^2-7m-15$

16. $(x-4)(x+2)$
17. $(2x+1)(x-4)$
18. $(y-3)(y-2)$
19. $2(2x-1)(6x+5)$
20. $6(2n+1)(2n-1)$
21. $4xy(x^2y+2x-9y)$
22. $(x+4y)(x-3y)$
23. $3(2x+1)(x-5)$
24. $(2x+3y)^2$
25. $(x+3y^2)(x+3y^2)$
26. $(5+2x)(3-10x)$
27. $2(x-2y)$
28. $(m-n)(3x+1)$
29. $(4x+3)(3x+2)$
30. $(9m+5)(4m-3)$

31. $2ab^2-6abc+4a^2b$
32. $x^2-7x+12$
33. $5x^2-40x+35$
34. $x^2-14xy+24y^2$
35. $4x^2-9y^2$
36. $7x^2-7$
37. $2p^2+5p-12$
38. $6x^2-13x-5$
39. $3x^3+x^2-2x$
40. $2x^3+8x^2-3x-12$
41. $2t^3+9t^2+4t$
42. $5r^2s-7rs+2s$
43. $12+18t+8t^2$
44. $25-(2x-1)^2$
45. $3x^2(m^4-1)+x(m^4-1)-4(m^4-1)$

31. $2ab(b-3c+2a)$
32. $(x-3)(x-4)$
33. $5(x-7)(x-1)$
34. $(x-12y)(x-2y)$
35. $(2x-3y)(2x+3y)$
36. $7(x+1)(x-1)$
37. $(2p-3)(p+4)$
38. $(3x+1)(2x-5)$
39. $x(3x-2)(x+1)$
40. $(x+4)(2x^2-3)$
41. $t(t+4)(2t+1)$
42. $s(r-1)(5r-2)$
43. $2(6+9t+4t^2)$
44. $4(3-x)(2+x)$
45. $(m-1)(m+1)(m^2+1)(3x+4)(x-1)$