MTH-4106 Factoring and Algebraic Fractions: **Worksheet #6**

If you can, factor the following polynomials (binomials!) using the **difference of squares method**. Please note that some of these binomials cannot be factored as they do not fit the format for the difference of squares method!

1. $b^2 - 16c^2$

2. $25v^4 - 36w^2$

3. $25 - x^6$

4. $y^8 - 64z^2$

5. $16r^2 - 25s^2t^2$

6. $a^2b^4 - 49c^2$

7. $x - 9y^2$

8. $169x^4 - 81z^8$

9. $\frac{1}{4}a^2 - \frac{1}{16}b^2$

10. $b^2 - 2x^2$

11. $4x^4 - y^4$

12. $a^2 - 4y^4$

13. $4 - x^2$

14. $\frac{9c^2}{25} - 49d^2$

15. $2x - y^2$

16. $x^2 + 4$

17. $a^2y^2 - 4b^2$

18. $25 - t^2$

19. $1 - x^2$

20. $\frac{x^4}{4} - \frac{9}{x^9}$

21. $\frac{x^2}{64} - \frac{y^2}{81}$

22. $x^2 - 0.04$

23. $y^2 - 1$

24. $225 - 1.44a^2$

25. $9y^2 - 4x^2$

26. $9 - x^2$

27. $x - 4$

28. $25 - x^2$

29. $1 - a$

30. $-4 + x^2$

31. $0.25x^4 - 0.36y^{16}$

32. $\frac{a^2b^4}{25} - \frac{c^4d^9}{16}$

33. $\frac{x^2}{100} - \frac{1}{49}$

34. $-9z^2 + 4$

35. $4k^2 - 1$

36. $b^4 - 12$

37. $1.21y^2 - 2.25z^4$

38. $-16x^2 + 9y^4$

39. $-x^2 - 1$

40. $1 - 100a^6b^{10}$

41. $-x^4 + 25$

42. $x^2 - y^2$

43. $x - 1$

44. $b^4 - a^2$

45. $a - b$

46. $1 - 16x^2$

47. $y^2 - 4x$

48. $9 - 4b^2$

49. $4y^2 - z^2$

50. $9 - 16x$

51. $36a^2 - 5b^2$

52. $h^2 - 16g^2$

53. $4a^2 - b$

54. $16a^2 - 9b^2$

55. $d^2 - f^2$

56. $x^2 - 1$

57. $x^9 - 100$

58. $-16 + x^{16}$

Answers - Worksheet #6

$(b-4c)(b+4c)$

$(5v^2-6w)(5v^2+6w)$

$(5-x^3)(5+x^3)$

$(y^4+8z)(y^4-8z)$

$(4r+5st)(4r-5st)$

$(ab^2-7c)(ab^2+7c)$

can't do

$(13x^2-9z^4)(13x^2+9z^4)$

$\left(\frac{1}{2}a+\frac{1}{4}b\right)\left(\frac{1}{2}a-\frac{1}{4}b\right)$

can't do

$(2x^2+y^2)(2x^2-y^2)$

$(a-2y^2)(a+2y^2)$

$(2-x)(2+x)$

$\left(\frac{3c}{5}+7d\right)\left(\frac{3c}{5}-7d\right)$

can't do

can't do

. $(ay-2b)(ay+2b)$

. $(5+t)(5-t)$

1. $(1-x)(1+x)$

.0. can't do

21. $\left(\frac{x}{8}+\frac{y}{9}\right)\left(\frac{x}{8}-\frac{y}{9}\right)$

.2. $(x-0.2)(x+0.2)$

23. $(y-1)(y+1)$

24. $(15-1.2a)(15+1.2a)$

25. $(3y+2x)(3y-2x)$

26. $(3-x)(3+x)$

27. can't do

28. $(5-x)(5+x)$

29. can't do

30. $x^2-4=(x+2)(x-2)$

31. $(0.5x^2-0.6y^8)(0.5x^2+0.6y^8)$

32. can't do

33. $\left(\frac{x}{10}+\frac{1}{7}\right)\left(\frac{x}{10}-\frac{1}{7}\right)$

34. $4-9z^2=(2-3z)(2+3z)$

35. $(2K+1)(2K-1)$

36. can't do

37. $(1.1y-1.5z^2)(1.1y+1.5z^2)$

38. $9y^4-16x^2=(3y^2+4x)(3y^2-4x)$

39. can't do

40. $(1-10a^3b^5)(1+10a^3b^5)$

41. $25-x^4=(5-x^2)(5+x^2)$

42. $(x+y)(x-y)$

43. can't do

44. $(b^2-a)(b^2+a)$

45. can't do

46. $(1+4x)(1-4x)$

47. can't do

48. $(3-2b)(3+2b)$

49. $(2y+z)(2y-z)$

50. can't do

51. can't do

52. $(h-4g)(h+4g)$

53. can't do

54. $(4a-3b)(4a+3b)$

55. $(d+f)(d-f)$

56. $(x+1)(x-1)$

57. can't do

58. $(x^8-4)(x^8+4)$