➢ **GCF Factoring (List all factors)**

1. $9xy^2 + 18y$

Answer: $9y(xy + 2)$

2. $21x^3y^4 - 49x^3y^5$

Answer: $7x^3y^4(3 - 7y)$

3. $10x^2y^4 + 12x^3y^2 + 2xy^3$

Answer: $2xy^2(5xy^2 + 6x^2 + y)$

4. $6x^5y^3 - 18x^4y + 36x^3y^2$

Answer: $6x^3y(x^2y^2 - 3x + 6y)$

➢ **Difference of Squares Factoring (Square Roots)**

5. $x^2 - 16$

Answer: $(x - 4)(x + 4)$

6. $x^2 - 100$

Answer: $(x - 10)(x + 10)$

7. $25x^2y^4 - 49$

Answer: $(5xy^2 - 7)(5xy^2 + 7)$

8. $9x^2y^2 - z^4$

Answer: $(3xy - z^2)(3xy + z^2)$

➢ **Trinomial Factoring (Shortcut)**

9. $x^2 + 7x + 12$

Answer: $(x + 3)(x + 4)$

10. $x^2 + x - 30$

Answer: $(x + 6)(x - 5)$

11. $x^2 - 10x + 24$

Answer: $(x - 4)(x - 6)$

12. $x^2 - 21x - 22$

Answer: $(x + 1)(x - 22)$

➢ Trinomial Factoring – Illegal Move (DRS)

13. $2x^2 - 3x - 5$

Answer: $(2x-5)(x+1)$

14. $5x^2 + 14x - 3$

Answer: $(5x-1)(x+3)$

15. $6x^2 - 17x + 7$

Answer: $(3x-7)(2x-1)$

16. $3x^2 + 17x + 10$

Answer: $(3x+2)(x+5)$

➢ Solve each equation

17. $(x-5)(x+6) = 0$

$x =$ 5 & -6

18. $(x+4)(2x-3) = 0$

$x =$ -4 & $\frac{3}{2}$

19. $x^2 - 6x + 8 = 0$

$(x-2)(x-4)$

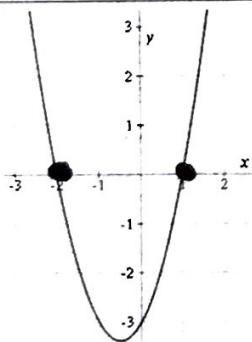$x =$ 2 & 4

20. $x^2 - 49 = 0$

$(x-7)(x+7)$

$x =$ 7 & -7

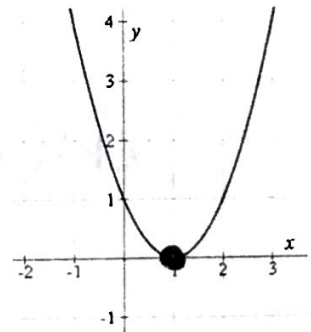## ➢ Solve each equation using the graph of a quadratic equation

21.

$x =$ -2 & 1

22.
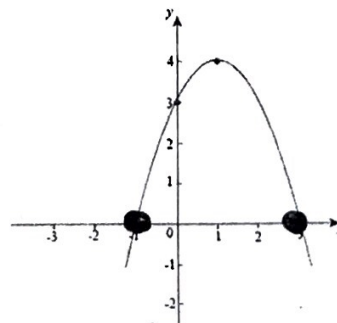
$x =$ -1 & 3

23.

$x =$ 1

24. $x^2 + 5x - 6 = 0$

2 Real Roots

25. $x^2 + 5x + 10 = 0$

0 Real Roots

26. $x^2 - 6x + 9 = 0$

1 Real Roots