

Factoring Practice

Factor a monomial.

1. $8x + 12$

2. $3a^2 + 5a^5$

3. $10x^4 - 12x^2$

4. $2y^5 - 3y^4 + 7y^3$

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

6. $16x^2y - 8x^3y^4 - 48x^2y^2$

Answers:

1. $4(2x + 3)$

2. $a^2(3 + 5a^3)$

3. $2x^2(5x^2 - 6)$

4. $y^3(2y^2 - 3y + 7)$

5. $x^2y^2(x^2y^2 - 3xy + 6)$

6. $8x^2y(2 - xy^3 - 6y)$

Factor by grouping.

7. $x^3 + 4x^2 + 3x + 12$

8. $2y^3 + 4y^2 + 3y + 6$

9. $yz + 6z - 3y - 18$

10. $t^2 + 4t - st - 4s$

11. $21x^2 + 6xy - 49x - 14y$

12. $21x^2 - 49x + 6xy - 14y$

13. Examine problems 11 and 12 and the answers you got for each. Do different groupings of the middle terms in a polynomial affect the binomial factoring?

Answers:

7. $(x + 4)(x^2 + 3)$

8. $(y + 2)(2y^2 + 3)$

9. $(y + 6)(z - 3)$

10. $(t + 4)(t - s)$

11. $(7x + 2y)(3x - 7)$

12. $(7x + 2y)(3x - 7)$

13. No.

Factor the trinomials.

14. $a^2 + a - 12$ 15. $a^2 - 3a + 2$ 16. $z^2 - 12z - 160$ 17. $y^2 - 14y - 51$

18. $x^2 + x - 56$ 19. $x^2 + 20x + 100$ 20. $a^2 - 121$ 21. $a^2 - 25$

Answers:

14. $(a + 4)(a - 3)$ 15. $(a - 1)(a - 2)$ 16. $(z + 8)(z - 20)$ 17. $(y + 3)(y - 17)$
18. $(x + 8)(x - 7)$ 19. $(x + 10)(x + 10)$ 20. $(a + 11)(a - 11)$ 21. $(a + 5)(a - 5)$

Factor the trinomials.

22. $3b^2 - 13b + 4$ 23. $9z^2 + 3z + 2$ 24. $10t^2 + 11t + 3$

25. $6b^2 - 19b + 15$ 26. $15x^2 - 19x + 6$ 27. $14a^2 + 15a - 9$

Answers:

22. $(b - 4)(3b - 1)$ 23. prime 24. $(2t + 1)(5t + 3)$
25. $(2b - 3)(3b - 5)$ 26. $(3x - 2)(5x - 3)$ 27. $(2a + 3)(7a - 3)$