

FACTORING

Difference of Two Squares and Conjugates

Skills:

1. recognizing difference of two squares: $a^2 - b^2$.
2. factoring difference of two squares into conjugates: $a^2 - b^2 = (a + b)(a - b)$
3. review of proper polynomial factoring form
4. review of proper factoring order
5. review of monomial factoring

Factor the following completely.

1. $3a^2 - 12$

2. $8b^3 - 18b$

3. $4 - 12c$

4. $25 - 9d^2$

5. $3g^2 + 3$

6. $-4h^2 - 1$

7. $2k^4 - 72k^2$

8. $490 - 40m^2$

9. $-64n^2 - n$

10. $100p^2 - 81$

11. $q^2 - 4r^2$

12. $4s^3 - 4st^2$

13. $5u^5 + 500u^3$

14. $-v^2 + 144w^2$

15. $9x^2 - 169y^2$

16. $-z^3 - 121z$

17. $121a^2 - 400$

18. $b^2 - 16$

19. $2c^6 - 8$

20. $-16d^4 + 81$

21. $32f^2 + 98$

22. $-20g^4 + 5g^6$

23. $49 - 9h^2$

24. $-k^2 + 1$

25. $121m^2 - 625$

26. $4np^2 - 225n$

27. $300 - 3q^2$

28. $r^3 - 9$

29. $-s^2 - 900$

30. $u^2 - t^2$

Answers

1. $3(a - 2)(a + 2)$

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

3. $-4(3c - 1)$

4. $-(3d + 5)(3d - 5)$

5. $3(g^2 + 1)$

6. $-(4h^2 + 1)$

7. $2k^2(k + 6)(k - 6)$

8. $-10(2m + 7)(2m - 7)$

9. $-n(64n + 1)$

10. $(10p + 9)(10p - 9)$

11. $(q + 2r)(q - 2r)$

12. $4s(s + t)(s - t)$

13. $5u^3(u^2 + 100)$

14. $-(v - 12w)(v + 12w)$

15. $(3x + 13y)(3x - 13y)$

16. $-z(z^2 + 121)$

17. $(11a + 20)(11a - 20)$

18. $(b^2 + 4)(b + 2)(b - 2)$

19. $2(c^3 + 2)(c^3 - 2)$

20. $-(4d^2 + 9)(2d + 3)(2d - 3)$

21. $2(16f^2 + 49)$

22. $5g^4(g + 2)(g - 2)$

23. $-(3h + 7)(3h - 7)$

24. $-(k + 1)(k - 1)$

25. $(11m + 25)(11m - 25)$

26. $n(2p + 15)(2p - 15)$

27. $-3(q + 10)(q - 10)$

28. $r^3 - 9$

29. $-(s^2 + 900)$

30. $-(t + u)(t - u)$