

Productos notables y Factorización

Décimo - 2016

A. Resolver los siguientes productos notables:

1. $(2a + 3b)^2$

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

5. $(2a - 1)(1 + 2a)$

7. $(a - 11)(a + 10)$

9. $(2m + 9)(2m - 9)$

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

13. $(10x^3 - 9xy^5)^2$

15. $121p^4 - 144q^8$

17. $(4x - 3)^2$

19. $(5x + 2) \cdot (5x - 2)$

21. $27x^3 + 64$

23. $(x + 2)(x - 3)$

25. $a(x + y)$

27. $(3x^4 - 5y^2)^2$

29. $(7x^2 - 12y^3)(7x^2 + 12y^3)$

2. $(a^2 b^2 - 1)(a^2 b^2 + 7)$

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

6. $(am + bn)(am - bn)$

8. $(x^3 + 7)(x^3 + 6)$

10. $(n^2 + 2n + 1)(n^2 - 2n - 1)$

12. $(a^2 - ab + b)(a^2 - b^2 + ab)$

14. $81a^2 - 225b^4$

16. $(x - 4)^2$

18. $(2x + 3y)^3$

20. $(3x - 2)^3$

22. $8x^3 - 125$

24. $(x^2 + x - 1)^2$

26. $(2x + 5y)(5x - 3y)$

28. $(5a + 10b)(5a - 10b)$

30. $(1 - 4y)^3 =$

B. Factorizar:

1. $x^2 + 4x - 5 =$

3. $3p^2 + 10p + 8 =$

5. $x^2 - 6x + 9 =$

7. $x^3 + y^3 =$

9. $x^2 - 4 =$

11. $16x^6 + 80x^3 + 75 =$

13. $a^2 + 3a - 54 =$

15. $1 - 12y + 48y^2 - 64y^3 =$

2. $6a^2 + ab - b^2 =$

4. $x^2 + 6x + 9 =$

6. $4a^2 + 4ab + b^2 =$

8. $9a^2 - 30ab + 25b^2 =$

10. $4a^2 - 1 =$

12. $y^2 - 19y + 84 =$

14. $x^2 + 8x + 15 =$

16. $x^3 + x^2 =$

17. $2x^4 + 4x^2 =$

18. $9 + 6x + x^2 =$

19. $x^4 - 2x^2 - 3 =$

20. $2x^4 + x^3 - 8x^2 - x + 6 =$

C. Simplificar:

1. $\frac{x^2 + 7x + 12}{x^2 + 5x + 6}$

2. $\frac{a^3 - 8a^2 + 19a - 12}{2a^3 - 13a^2 + 17a + 12}$

3. $\frac{ac + bc + ad + bd}{3a + 3b - by - ay}$

4. $\frac{x^3 - y^3}{x^3 + x^2y + xy^2}$

5. $\frac{a^4 - b^4}{a^2 - b^2}$

6. $\frac{(x^2 - 25)(x^2 - 8x + 15)}{(x^2 - 9)(x^2 - 7x + 10)}$

7. $\frac{y^2 + 9y + 18}{y - 5}$

8. $\frac{y - 3}{3} + \frac{4}{y - 1}$

9. $\frac{x}{x + 8} + \frac{13}{x + 8} + \frac{2}{x + 8}$

10. $\frac{y^2 - 4}{4y} * \frac{2y}{x^2 + y^2}$

11. $\frac{3}{4 - x} + \frac{2}{5 - x}$

12. $\frac{4x^2 - 12x + 9}{2x^2 - 5x + 2} \div \frac{9 - 4x^2}{1 - 4x^2}$

13. $\frac{x + 1}{x^2 + 2x + 1} + \frac{1 - 2x}{(x + 1)^2} + \frac{5x}{x + 1}$

14. $\frac{x}{x + y} + \frac{y}{x^2 + y^2}$

15. $\frac{x + 1}{x^2 - 1}$

16. $\frac{y^2 - y}{y^3 - y^2}$

17. $\frac{x^4 + x^3 + x^2}{3x^2 + 3x + 3}$

18. $\frac{(x + 4)^2(x - 4)^2}{x^2 - 16}$

19. $\frac{3x^3 - 2x^2 - 7x - 2}{x^3 - 4x}$

20. $\frac{9 - a^2}{a^2 - 3a}$

D. Factorizar:

1. $9x^2 - 4y^2 =$

2. $5x^3y - 10x^2y^2 + 15xy^3 =$

3. $9a^2 + 27ab =$

4. $x^2 + 6x + 9 =$

5. $x^2 + 8x + 16 =$

6. $4x^2 - 16 =$

7. $-x^2 - x - 6 =$

8. $x^2 + 25 =$

9. $x^3 - 27 =$

10. $x^3 + 125 =$

11. $x^2 - 7x + 6 =$

12. $x^2 + 9x + 20 =$

13. $x^2 - x - 2 =$

14. $x^2 - 6x + 8 =$

15. $x^3 + 2x^2 - 3xy + y^2 - y^3 =$

16. $ax - ay - bx + by =$

17. $20ac + 15bc + 4ad + 3bd =$

18. $18a^3 + 12a^2 - 15a - 10 =$

19. $x^5 + 20x^3 + 100x =$

20. Dividir: $x^2 - 7x + 6$ entre $x - 5$ ¿?????