

Завдання 1. Виконати загальне дослідження функції.

$$1.1. y = \frac{x^3}{2(x+1)^2}$$

$$1.2. y = \frac{5x}{4-x^2}$$

$$1.3. y = \frac{x^2-5}{x-3}$$

$$1.4. y = \frac{(x+1)^2}{x^2+1}$$

$$1.5. y = \frac{2x-1}{(x-1)^2}$$

$$1.6. y = \frac{3x+6}{x^2-4}$$

$$1.7. y = \frac{x^3}{x^2+1}$$

$$1.8. y = \frac{4x}{4+x^2}$$

$$1.9. y = \frac{5x}{4-x^2}$$

$$1.10. y = \frac{x^2-3x+2}{x+1}$$

$$1.11. y = \frac{2-4x^2}{1-4x^2}$$

$$1.12. y = \frac{3x^2}{8-x^3}$$

$$1.13. y = \frac{x^3}{3(x-1)^2}$$

$$1.14. y = \frac{x^4}{x^3-1}$$

$$1.15. y = \frac{x^3}{x^2-x+1}$$

$$1.16. y = \frac{3x}{x^2-1}$$

$$1.17. y = \frac{x+1}{(x-1)^2}$$

$$1.18. y = \frac{x^3}{x^2-x+1}$$

$$1.19. y = \frac{x^2+6}{x^2+1}$$

$$1.20. y = \frac{2x-1}{(x-1)^2}$$

$$1.21. y = \frac{x^2}{x-1}$$

$$1.22. y = \frac{4-2x}{1-x^2}$$

$$1.23. y = \frac{x^5}{x^4-1}$$

$$1.24. y = \frac{x^2}{4x^2-1}$$

$$1.25. y = \left(1 + \frac{1}{x}\right)^2$$

$$1.26. y = \frac{2-4x^2}{1-4x^2}$$

$$1.27. y = \frac{x^2-3x+2}{x+1}$$

$$1.28. y = (x^2-1)^3$$

$$1.29. y = \frac{5x}{1+x^2}$$

$$1.30. y = \frac{x^3}{x^2+1}$$