

Draw phase portraits on the plane $(x, y = \dot{x})$ for the following equations:

1. $\ddot{x} + 4x = 0.$

2. $\ddot{x} - x = 0.$

3. $\ddot{x} - x + x^2 = 0.$

4. $\ddot{x} - 3x^2 = 0.$

5. $\ddot{x} + 2x^3 = 0.$

6. $\ddot{x} + 2x^3 - 2x = 0.$

7. $\ddot{x} + e^x - 1 = 0.$

8. $\ddot{x} - 2^x + x + 1 = 0.$

9. $\ddot{x} - \sin x = 0.$

10. $\ddot{x} + 2 \cos x - 1 = 0.$

11. $\ddot{x} - 4\dot{x} + 3x = 0.$

12. $\ddot{x} + 2\dot{x} + 5x = 0.$

13. $\ddot{x} - \dot{x} - 2x = 0.$

14. $\ddot{x} + 2\dot{x} + \dot{x}^2 + x = 0.$

15. $\ddot{x} + \dot{x} + 2x - x^2 = 0.$

17. $\ddot{x} + 2\dot{x} - x^2 = 0.$

16. $\ddot{x} + \dot{x}^2 - x^2 + 1 = 0.$

18. $\ddot{x} + \sqrt{x^2 + \dot{x}^2} - 1 = 0.$

19. $\ddot{x} + 5\dot{x} - 4 \ln \frac{x^2+1}{2} = 0.$

20. $\ddot{x} + \dot{x} + \operatorname{arctg}(x^2 - 2x) = 0.$

21. $\ddot{x} + \dot{x}^3 - \dot{x} + x = 0.$

22. $\ddot{x} + (x^2 - 1)\dot{x} + x = 0.$

23. $\ddot{x} + \dot{x} - 2 \operatorname{arctg} \dot{x} + x = 0.$

24. $\ddot{x} + 2\dot{x} - \dot{x} + x = 0.$