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index of differential equations

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Entry type	Topic
Classification	msc 35-00
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Related topic	ClairautsEquation

Differential equations for functions on \mathbb{R}

1. General solution, particular solutions, singular solution
2. <http://planetmath.org/EquationYFxEquation> $y'' = f(x)$
3. Separation of variables
4. ODE types reducible to the variables separable case
5. Exact differential equation
6. Linear differential equation of first order
7. Second order linear differential equation with constant coefficients
8. General solution of linear differential equation
9. Frobenius method
10. Bessel's equation
11. Chebyshev equation
12. Hermite equation
13. van der Pol equation
14. Hypergeometric equation
15. <http://planetmath.org/LaguerrePolynomial> Laguerre's differential equation
16. Second order ordinary differential equation
17. Bernoulli equation
18. <http://planetmath.org/DAlembertsEquation> d'Alembert's equation
19. Clairaut's equation
20. Riccati equation

Ordinary differential equations

1. Linear ordinary differential equations
2. Differential equation of the isogonal trajectories, the tilt curves
3. Frenet equations
4. <http://planetmath.org/HamiltonianEquations> Hamilton equations
5. Geodesic equation
6. Gradient system
7. Lorenz equation

Partial differential equations

1. Gradient system
2. <http://planetmath.org/EulerLagrangeDifferentialEquation> Euler-Lagrange equations
3. Hamilton equations
4. Heat equation
5. Laplace equation
6. Poisson's equation
7. Wave equation
8. <http://planetmath.org/DAlembertAndDBernoulliSolutionsOfWaveEquation> d'Alembert and D. Bernoulli solutions of wave equation
9. Helmholtz equation
10. Maxwell's equations
11. Korteweg - de Vries equation
12. Schrödinger's wave equation

13. Dirac equation
14. Klein-Gordon equation
15. Hamilton-Jacobi equation
16. Telegraph equation
17. Black-Scholes equation
18. Solved examples:
 - a) example of solving the heat equation
 - b) time-dependent example of heat equation
 - c) using Laplace transform to solve heat equation
 - d) <http://planetmath.org/SolvingTheWaveEquationByDBernoulli> solving the wave equation due to D. Bernoulli

Complex

1. Beltrami differential equation
2. Cauchy-Riemann equations