**Variant 1.**

1. Find the function that satisfies the boundary condition  and minimize the integral

.

Find the general solution of the Euler equation that satisfies the given boundary condition and transversality condition.

2. Minimize the functional



under the boundary conditions



Find the general solution of the Euler equation. Use boundary conditions. Show the graph.

**Variant 2.**

1. Minimize the functional



under the boundary conditions



Find the general solution of the Euler equation. Use boundary conditions. Show the graph.

2. Find the functions   that minimize the integral



under the boundary conditions



Find the general solution of the Euler equation. Use boundary conditions. Show the graph.

**Variant 3.**

1. Find the function  that minimize the integral



under the boundary conditions



Find the general solution of the Euler – Poisson equation. Use boundary conditions. Show the graph.

2. Find the function that satisfies the boundary condition  and minimize the integral

.

Find the general solution of the Euler equation that satisfies the given boundary condition and transversality condition. Show the graph.

**Variant 4.**

1. Minimize the functional



under the boundary conditions



Find the general solution of the Euler equation. Use the boundary conditions. Show the graph.

2. Find the functions   that minimize the integral



under the boundary conditions



Find the general solution of the Euler equation. Use the boundary conditions. Show the graph.

**Variant 5.**

1. Find the functions   that minimize the integral



under the boundary conditions



Find the general solution of the Euler equation that satisfies the boundary conditions. Show the graph.

2. Minimize the integral



Find the general solution of the Euler equation that satisfies the transversality conditions. Show the graph.

**Variant 6.**

1. Find the function  that minimize the integral



under the boundary conditions



Find the general solution of the Euler – Poisson equation. Use the boundary conditions. Show the graph.

2. Find the function  that minimize the integral



and satisfies the boundary conditions



Find the general solution of the Euler equation. Use the boundary conditions. Show the graph.

**Variant 7.**

1. Minimize the integral

.

Find the general solution of the Euler equation that satisfies the transversality conditions. Show the graph.

2. Find the function  that minimize the integral



and satisfies the boundary conditions



Find the general solution of the Euler equation. Use the boundary conditions. Show the graph.

**Variant 8.**

1. Minimize the integral



with boundary conditions



Find the general solution of the Euler equation that satisfies the boundary conditions. Show the graph.

2. Minimize the integral



with given boundary conditions. Determine the Ostrogradski equations

**Variant 9.**

1. Minimize the integral



with boundary conditions



Find the general solution of the Euler equation. Use the boundary conditions. Show the graph.

2. Minimize the integral



with given boundary conditions. Determine the Ostrogradski equations.

**Variant 10.**

1. Find the function that satisfies the boundary condition  and minimize the integral

.

Find the general solution of the Euler equation that satisfies the given boundary condition and transversality condition.

2. Minimizes the functional



under the boundary conditions



Find the general solution of the Euler equation. Use boundary conditions. Show the graph.

**Variant 11.**

1. Minimize the functional

.

Find the general solution of the Euler equation that satisfies the transversality conditions. Show the graph.

2. Find the functions   that minimize the integral



under the boundary conditions



Find the general solution of the Euler equation. Use boundary conditions. Show the graph.

**Variant 12.**

1. Find the function  that minimize the integral



under the boundary conditions



Find the general solution of the Euler – Poisson equation. Use boundary conditions. Show the graph.

2. Find the function that satisfies the boundary condition  and minimize the integral

.

Find the general solution of the Euler equation. Use boundary conditions. Show the graph.

**Variant 13.**

1. Minimize the integral

.

Find the general solution of the Euler equation that satisfies the transversality conditions. Show the graph.

2. Find the function  that minimize the integral



and satisfies the boundary conditions



Find the general solution of the Euler equation. Use the boundary conditions. Show the graph.

**Variant 14.**

1. Minimize the integral



with boundary conditions



Find the general solution of the Euler equation. Use the boundary conditions. Show the graph.

2. Minimize the integral



with given boundary conditions. Determine the Ostrogradski equations

**Variant 15.**

1. Minimize the integral



with boundary conditions



Find the general solution of the Euler equation. Use the boundary conditions. Show the graph.

2. Minimize the integral



with given boundary conditions. Determine the Ostrogradski equations.

**Variant 16.**

1. Find the function that satisfies the boundary condition  and minimize the integral

.

Find the general solution of the Euler equation that satisfies the given boundary condition and transversality condition.

2. Minimize the functional



under the boundary conditions



Find the general solution of the Euler equation. Use boundary conditions. Show the graph.

**Variant 17.**

1. Minimize the functional



under the boundary conditions



Find the general solution of the Euler equation. Use boundary conditions. Show the graph.

2. Find the functions   that minimize the integral



under the boundary conditions



Find the general solution of the Euler equation. Use boundary conditions. Show the graph.

**Variant 18.**

1. Find the function  that minimize the integral



under the boundary conditions



Find the general solution of the Euler – Poisson equation. Use boundary conditions. Show the graph.

2. Find the function that satisfies the boundary condition  and minimize the integral

.

Find the general solution of the Euler equation that satisfies the given boundary condition and transversality condition. Show the graph.

**Variant 19.**

1. Minimize the functional



under the boundary conditions



Find the general solution of the Euler equation. Use the boundary conditions. Show the graph.

2. Find the functions   that minimize the integral



under the boundary conditions



Find the general solution of the Euler equation. Use the boundary conditions. Show the graph.

**Variant 20.**

1. Find the functions   that minimize the integral



under the boundary conditions



Find the general solution of the Euler equation that satisfies the boundary conditions. Show the graph.

2. Minimize the integral



Find the general solution of the Euler equation that satisfies the transversality conditions. Show the graph.

**Variant 21.**

1. Find the function  that minimize the integral



under the boundary conditions



Find the general solution of the Euler – Poisson equation. Use the boundary conditions. Show the graph.

2. Find the function  that minimize the integral



and satisfies the boundary conditions



Find the general solution of the Euler equation. Use the boundary conditions. Show the graph.

**Variant 22.**

1. Minimize the integral

.

Find the general solution of the Euler equation that satisfies the transversality conditions. Show the graph.

2. Find the function  that minimize the integral



and satisfies the boundary conditions



Find the general solution of the Euler equation. Use the boundary conditions. Show the graph.

**Variant 23.**

1. Minimize the integral



with boundary conditions



Find the general solution of the Euler equation that satisfies the boundary conditions. Show the graph.

2. Minimize the integral



with given boundary conditions. Determine the Ostrogradski equations

**Variant 24.**

1. Minimize the integral



with boundary conditions



Find the general solution of the Euler equation. Use the boundary conditions. Show the graph.

2. Minimize the integral



with given boundary conditions. Determine the Ostrogradski equations.

**Variant 25.**

1. Find the function that satisfies the boundary condition  and minimize the integral

.

Find the general solution of the Euler equation that satisfies the given boundary condition and transversality condition.

2. Minimizes the functional



under the boundary conditions



Find the general solution of the Euler equation. Use boundary conditions. Show the graph.

**Variant 26.**

1. Minimize the functional

.

Find the general solution of the Euler equation that satisfies the transversality conditions. Show the graph.

2. Find the functions   that minimize the integral



under the boundary conditions



Find the general solution of the Euler equation. Use boundary conditions. Show the graph.

**Variant 27.**

1. Find the function  that minimize the integral



under the boundary conditions



Find the general solution of the Euler – Poisson equation. Use boundary conditions. Show the graph.

2. Find the function that satisfies the boundary condition  and minimize the integral

.

Find the general solution of the Euler equation. Use boundary conditions. Show the graph.

**Variant 28.**

1. Minimize the integral

.

Find the general solution of the Euler equation that satisfies the transversality conditions. Show the graph.

2. Find the function  that minimize the integral



and satisfies the boundary conditions



Find the general solution of the Euler equation. Use the boundary conditions. Show the graph.

**Variant 29.**

1. Minimize the integral



with boundary conditions



Find the general solution of the Euler equation. Use the boundary conditions. Show the graph.

2. Minimize the integral



with given boundary conditions. Determine the Ostrogradski equations

**Variant 30.**

1. Minimize the integral



with boundary conditions



Find the general solution of the Euler equation. Use the boundary conditions. Show the graph.

2. Minimize the integral



with given boundary conditions. Determine the Ostrogradski equations.

**Variant 31.**

1. Minimize the integral

.

Find the general solution of the Euler equation that satisfies the transversality conditions. Show the graph.

2. Find the function  that minimize the integral



and satisfies the boundary conditions



Find the general solution of the Euler equation. Use the boundary conditions. Show the graph.

**Variant 32.**

1. Minimize the integral



with boundary conditions



Find the general solution of the Euler equation that satisfies the boundary conditions. Show the graph.

2. Minimize the integral



with given boundary conditions. Determine the Ostrogradski equations

**Variant 33.**

1. Minimize the integral



with boundary conditions



Find the general solution of the Euler equation. Use the boundary conditions. Show the graph.

2. Minimize the integral



with given boundary conditions. Determine the Ostrogradski equations.