

49. Ratkaise 1:n kertaluvun lineaarinen vakiokertoiminen differentiaaliyhtälö $y'(x) - 3y(x) = 4$.

```
DSolve[y' [x] - 3 y[x] == 4, y[x], x]
```

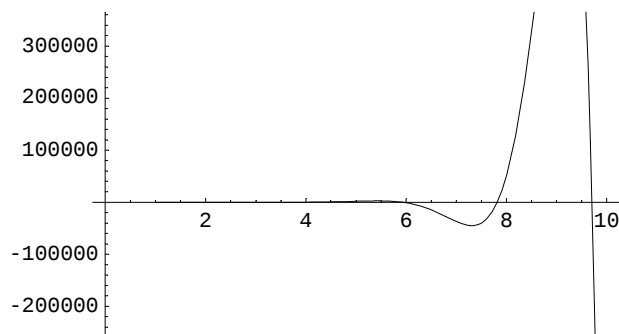
```
{ {y[x] -> -4/3 + e^(3 x) C[1]} }
```

50. Ratkaise 2:n kertaluvun lineaarinen vakiokertoiminen differentiaaliyhtälö $4y''(x) - 3y'(x) + 5y(x) = 2$. Määrä mieleisesi reunaehdot ja piirrä kuvaaja.

```
DSolve[{y'' [x] - 3 y' [x] + 5 y[x] == 2, y[0] == 0, y' [0] == 1}, y[x], x]
```

```
{ {y[x] -> 1/55 (22 - 11 e^(1/2 (3-i sqrt(11)) x) + 8 i sqrt(11) e^(1/2 (3-i sqrt(11)) x) - 11 e^(1/2 (3+i sqrt(11)) x) - 8 i sqrt(11) e^(1/2 (3+i sqrt(11)) x)) }
```

```
Plot[Re[y[x]] /. %, {x, 1, 10}]
```



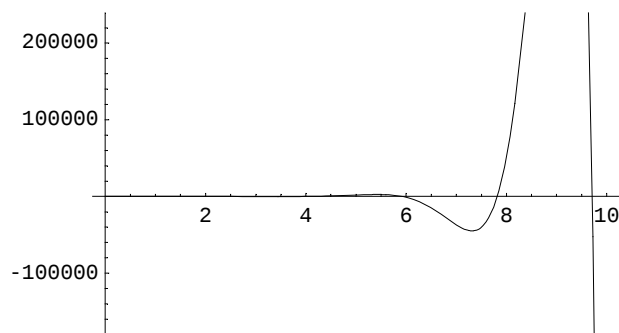
- Graphics -

Tai

```
In[122]:= juhuu = NDSolve[{y'' [x] - 3 y' [x] + 5 y[x] == 2, y[0] == 0, y' [0] == 1}, y[x], {x, 0, 10}]
```

```
Out[122]= { {y[x] -> InterpolatingFunction[{{0., 10.}}, <>][x]} }
```

```
In[123]:= Plot[y[x] /. juhuu, {x, 0, 10}]
```



Out[123]= - Graphics -