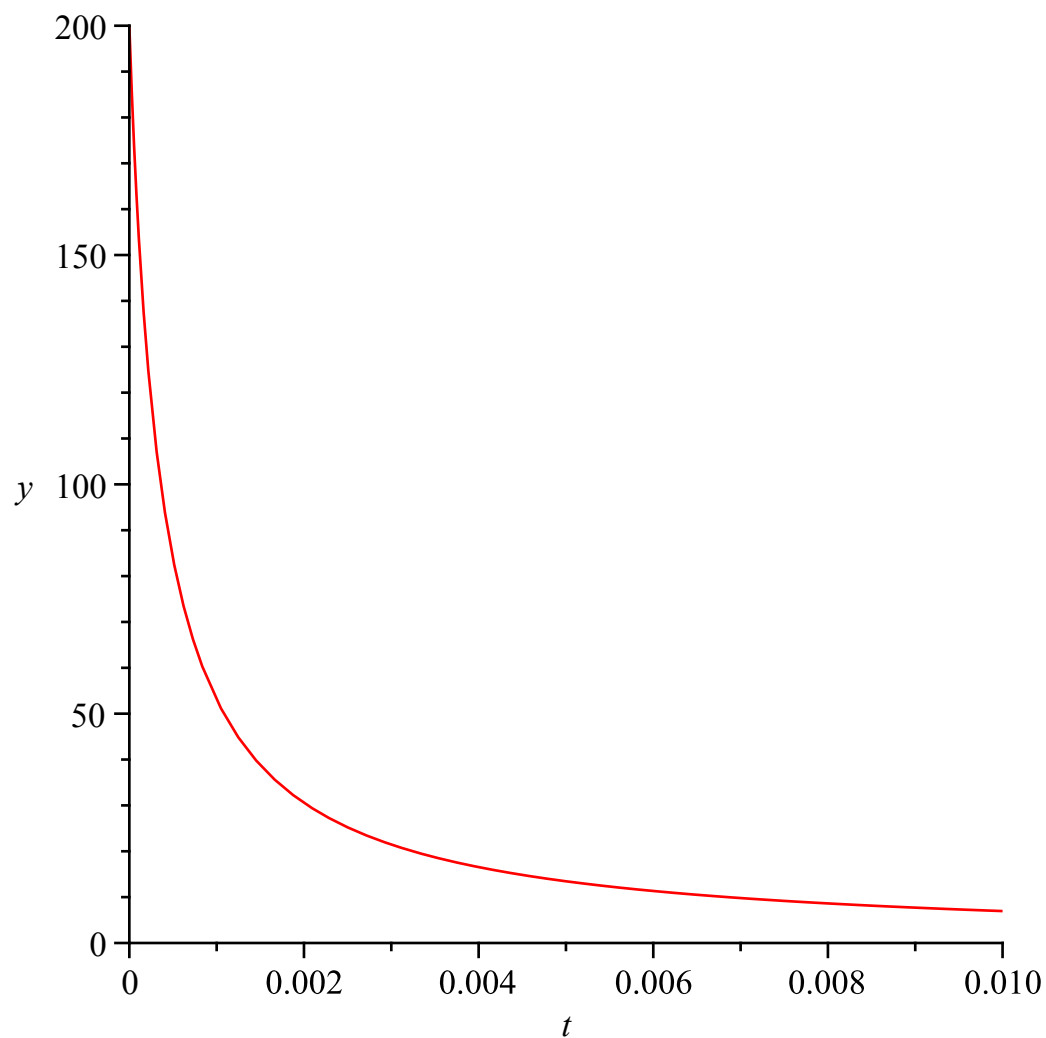


```

> restart
> Ecuacion := diff(v(t), t) = -K·v(t)·2
      Ecuacion :=  $\frac{d}{dt} v(t) = -K v(t)^2$  (1)
> Condicion := v(0) = 200
      Condicion :=  $v(0) = 200$  (2)
> SolPart := dsolve({Ecuacion, Condicion})
      SolPart :=  $v(t) = \frac{200}{1 + 200 K t}$  (3)
> EcuacionDos := diff(x(t), t) = rhs(SolPart)
      EcuacionDos :=  $\frac{d}{dt} x(t) = \frac{200}{1 + 200 K t}$  (4)
> CondicionDos := x(0) = 0
      CondicionDos :=  $x(0) = 0$  (5)
> SolPartDos := dsolve({EcuacionDos, CondicionDos})
      SolPartDos :=  $x(t) = \frac{\ln(1 + 200 K t)}{K}$  (6)
> TiempoFinal := isolate(rhs(SolPartDos) =  $\frac{1}{10}$ , t)
      TiempoFinal :=  $t = \frac{1}{200} \frac{e^{\frac{1}{10} K} - 1}{K}$  (7)
> Parametro := isolate(subs(t = rhs(TiempoFinal), rhs(SolPart) = 50), K); evalf(%)
      Parametro :=  $K = 20 \ln(2)$ 
       $K = 13.86294361$  (8)
> TiempoFinalUltimo := subs(K = rhs(Parametro), TiempoFinal); evalf(%)
      TiempoFinalUltimo :=  $t = \frac{1}{4000} \frac{e^{2 \ln(2)} - 1}{\ln(2)}$ 
       $t = 0.001082021281$  (9)
> Velocidad := subs(K = rhs(Parametro), SolPart)
      Velocidad :=  $v(t) = \frac{200}{1 + 4000 \ln(2) t}$  (10)
> plot(rhs(Velocidad), t = 0 .. 0.01, y = 0 .. 200)

```



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> TiempoNuevo := isolate(rhs(Velocidad) = 20, t); evalf(%)
```

$$\text{TiempoNuevo} := t = \frac{9}{4000 \ln(2)}$$

$$t = 0.003246063842$$

(11)

```
> Recorrido := subs(K = rhs(Parametro), t = rhs(TiempoNuevo), rhs(SolPartDos)); evalf(%)
```

$$\text{Recorrido} := \frac{1}{20} \frac{\ln(10)}{\ln(2)}$$

$$0.1660964048$$

(12)

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>
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