

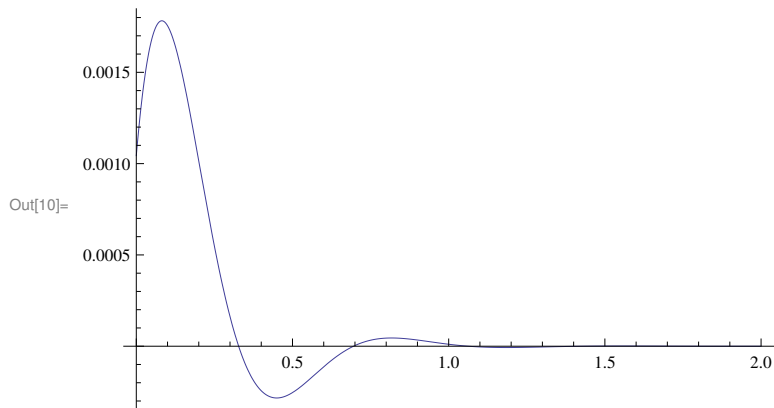
Problem 4.6.6, 8

In[5]:= `ytransient[t_] =`

`E^(-5 t) (160 Cos[Sqrt[73] t] / 153 281 + 383 443 Sin[Sqrt[73] t] / (15 328 100 Sqrt[73]))`

Out[5]=
$$e^{-5t} \left(\frac{160 \cos[\sqrt{73} t]}{153\,281} + \frac{383\,443 \sin[\sqrt{73} t]}{15\,328\,100 \sqrt{73}} \right)$$

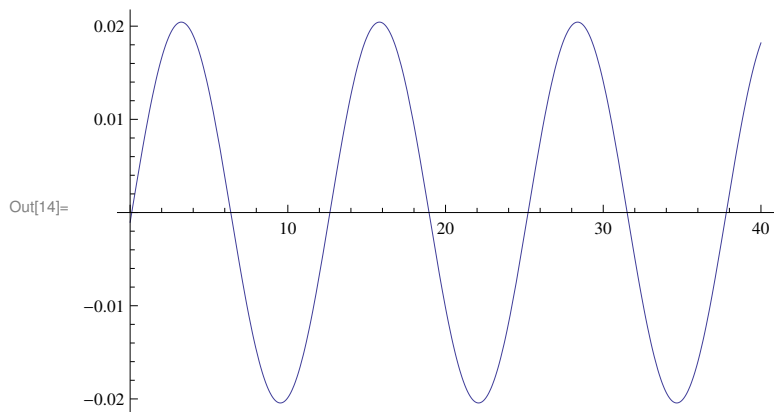
In[10]:= `transplot = Plot[ytransient[t], {t, 0, 2}, PlotRange -> All]`



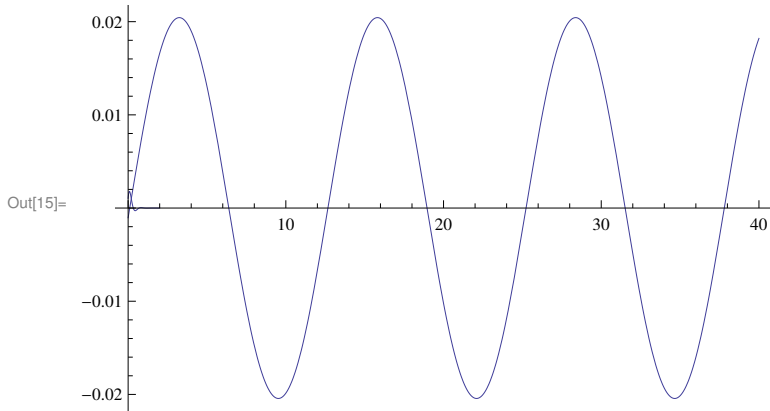
In[11]:= `yss[t_] = -160 Cos[t / 2] / 153 281 + 3128 Sin[t / 2] / 153 281`

Out[11]=
$$-\frac{160 \cos\left[\frac{t}{2}\right]}{153\,281} + \frac{3128 \sin\left[\frac{t}{2}\right]}{153\,281}$$

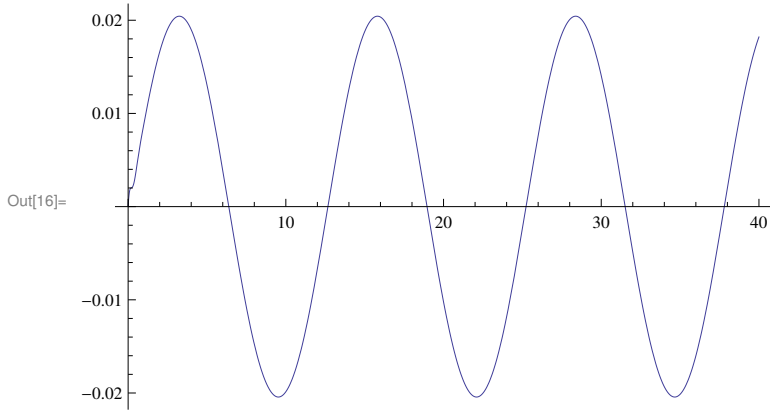
In[14]:= `ssplot = Plot[yss[t], {t, 0, 40}, PlotRange -> All]`



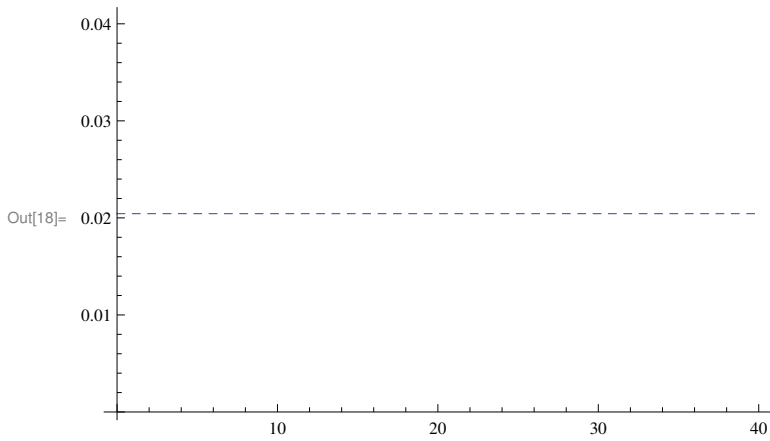
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In[15]:= Show[transplot, ssplot]
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In[16]:= solnplot = Plot[ytransient[t] + yss[t], {t, 0, 40}, PlotRange -> All]
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In[18]:= amplitudeplot = Plot[8 / Sqrt[153 281], {t, 0, 40}, PlotStyle -> Dashed]
```



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In[19]:= Show[solnplot, amplitudeplot]
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