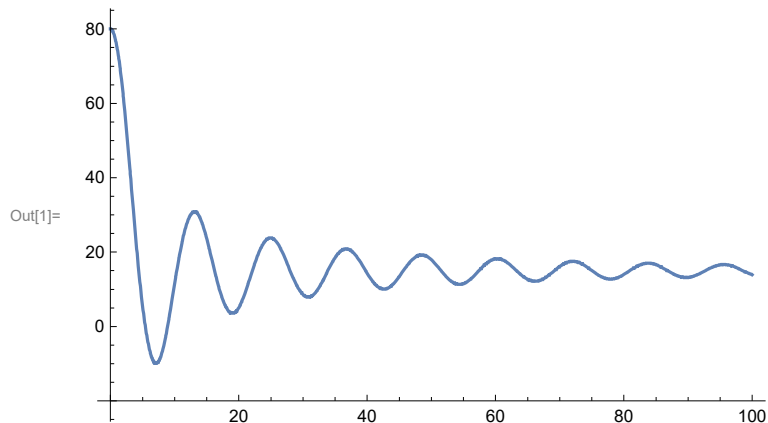


```

In[1]:= k = 20;
a1 = 1.6;
a2 = 1;
m = 70;
g = 10;

sol = NDSolve[ $\left\{x''[t] == \frac{1}{m} * (m * g + \text{Piecewise}[\{-k * x[t], x[t] > 0\}, \{0, x[t] \leq 0\}]) - a1 * x'[t] - a2 * x'[t] * \text{Abs}[x'[t]]\right\}, x[0] == -30, x'[0] == 0\}$ , x[t], {t, 0, 100}];
Plot[50 - x[t] /. sol, {t, 0, 100}, PlotRange -> All, AxesOrigin -> {0, -20}]

```



```

In[2]:= k = 20;
a1 = 1.6;
a2 = 1;
m = 70;
g = 10;

sol = NDSolve[ $\left\{x''[t] == \frac{1}{m} * (m * g - k * x[t] - a1 * x'[t] - a2 * x'[t] * \text{Abs}[x'[t]])\right\}, x[0] == -30, x'[0] == 0\}$ , x[t], {t, 0, 100}];
Plot[50 - x[t] /. sol, {t, 0, 100}, PlotRange -> All, AxesOrigin -> {0, -20}]

```

