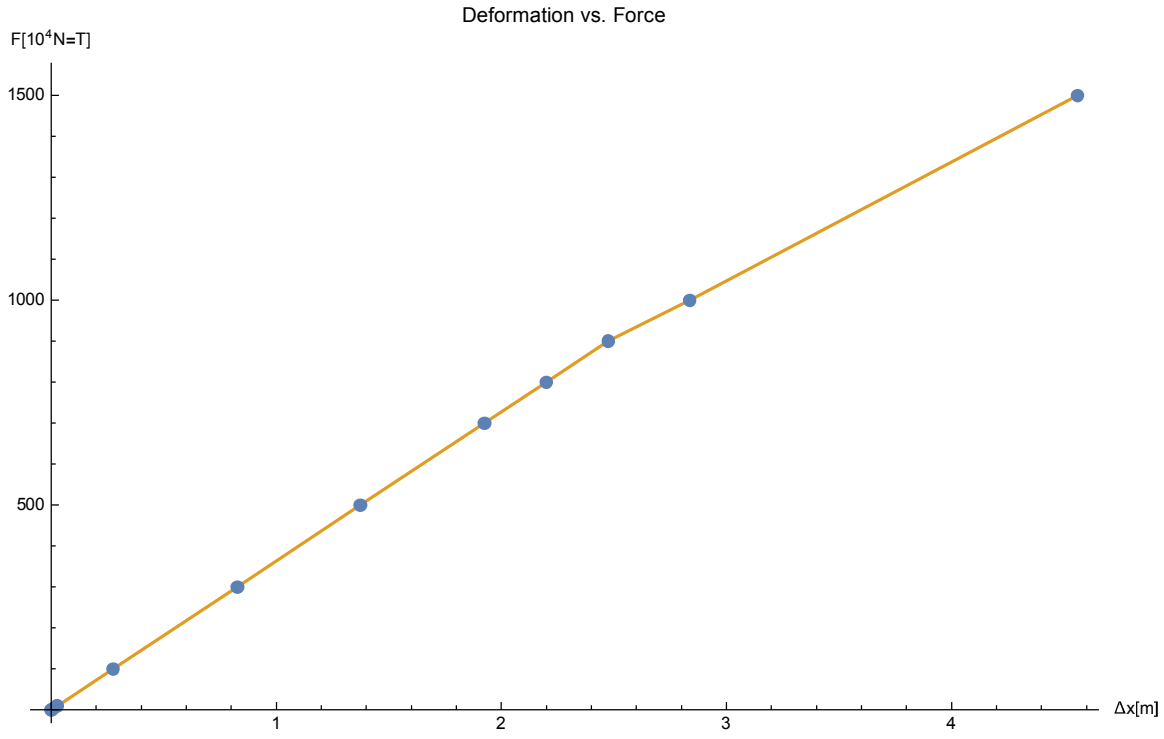
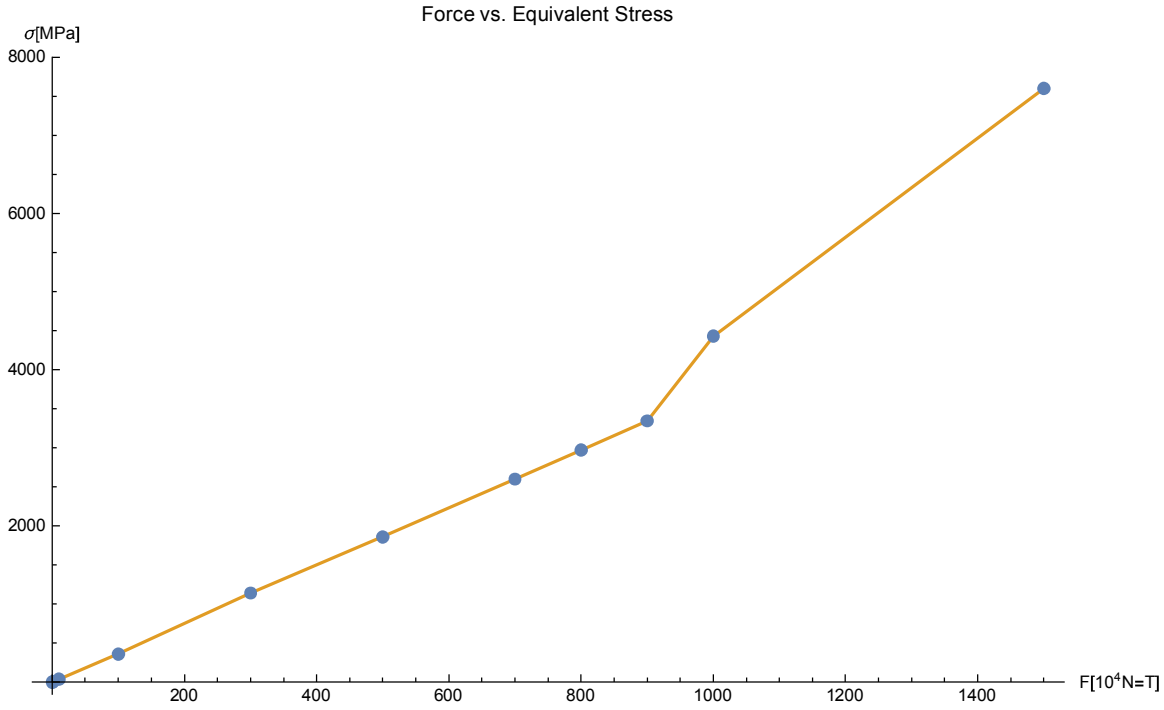
In[25]:=
```
F = {10^3, 10^4, 10^5, 10^6, 3 × 10^6, 5 × 10^6, 7 × 10^6, 8 × 10^6, 9 × 10^6, 10^7, 1.5 × 10^7} / 10^4;
Δx = {2.75 × 10^-4, 2.75 × 10^-3, 2.75 × 10^-2,
    0.275, 0.827, 1.3748, 1.9247, 2.1997, 2.4746, 2.837, 4.56};
σ = {3.6 × 10^5, 3.6 × 10^6, 3.6 × 10^7, 3.6 × 10^8, 1.14 × 10^9, 1.86 × 10^9,
     2.6 × 10^9, 2.97 × 10^9, 3.346 × 10^9, 4.43 × 10^9, 7.6 × 10^9} / 10^6;
```

In[28]:=
```
pl1 = ListPlot[{Transpose[{Δx, F}], Transpose[{Δx, F}]}, Joined → {False, True},
  AxesLabel → {"Δx[m]", "F[10^4N=T]"},
  PlotLabel → "Deformation vs. Force"
 ]
pl2 = ListPlot[{Transpose[{F, σ}], Transpose[{F, σ}]}, Joined → {False, True},
  AxesLabel → {"F[10^4N=T]", "σ[MPa]"},
  PlotLabel → "Force vs. Equivalent Stress"]
SetDirectory[NotebookDirectory[]]
Export["deformation.pdf", pl1]
Export["equivalent_stress.pdf", pl2]
```

Out[28]=



Out[29]=



Out[30]= H:\Version\git\ag\ansys\luka_fender

Out[31]= deformation.pdf

Out[32]= equivalent_stress.pdf

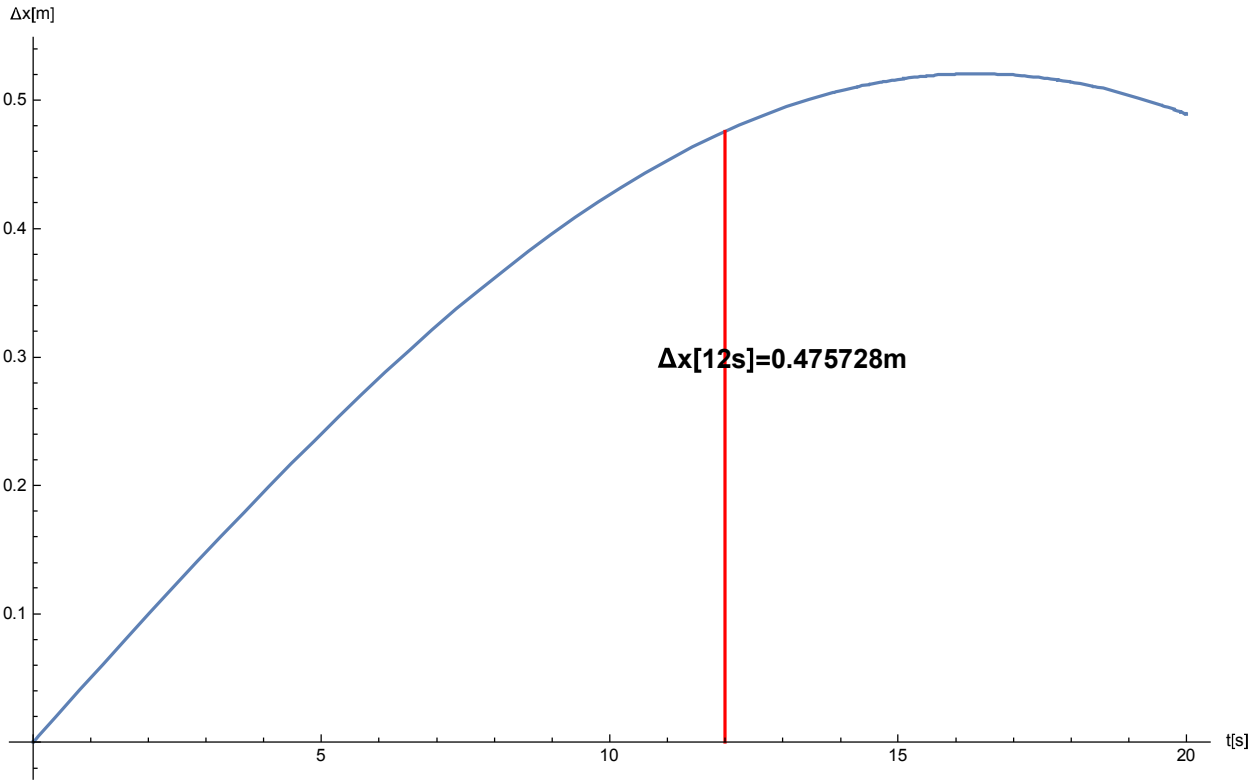
In[33]:=
```
line = Fit[Transpose[{Δx[[1 ;; 9]], F[[1 ;; 9]]}], {1, x}, x]
```

Out[33]= -0.107586 + 363.711 x

In[34]:=
```
k = 363.71;
m = 39 433; (* [kg] *)
v = 0.05; (* m/s *)
ω = Sqrt[k / m];
x[t_] := v/ω Sin[ω t];
```

In[39]:=
```
p1 = Plot[x[t], {t, 0, 20},
    AxesLabel → {"t[s]", "Δx[m]"}
  ];
p2 = ListPlot[{{12, 0}, {12, x[12]}}, Joined → True, PlotStyle → Red];
pp = Show[p1, p2, Graphics[Text[StyleForm["Δx[12s]=" <> ToString[x[12]] <> "m",
      FontSize -> 14, FontWeight -> "Bold"], {13, 0.3}]]]
```

Out[41]=



In[42]:=
```
SetDirectory[NotebookDirectory[]]
Export["odmik_cas.pdf", pp]
```

Out[42]= H:\Version\git\ag\ansys\luka_fender

Out[43]= odmik_cas.pdf