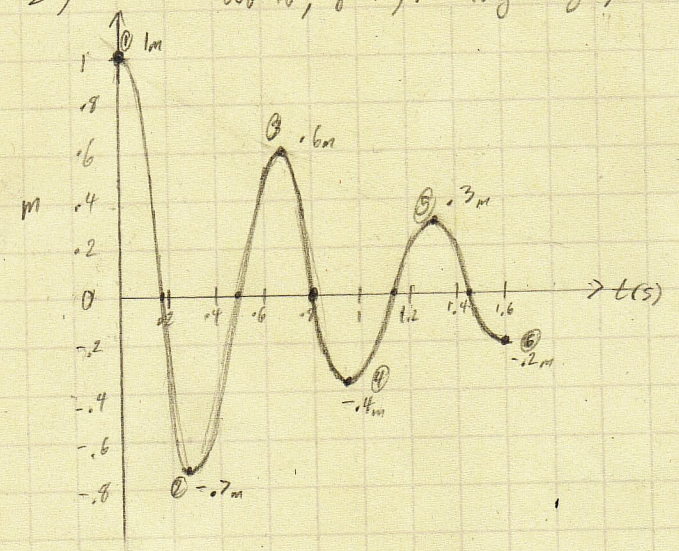
2) $\omega_0 = 10$, $\gamma = 1$, $m = 100g = .1kg$, $T = 0.628s$



velocity

point 1 → point 2

$\frac{-.2m - 1m}{.314s} = -5.41 \frac{m}{s}$

point 2 → point 3

$\frac{.6m - (-.7m)}{.314s} = 4.14 \frac{m}{s}$

point 3 → point 4

$\frac{-.4m - .6m}{.314s} = -3.185 \frac{m}{s}$

point 4 → 5

$\frac{.3m - (-.4m)}{.314s} = 2.23 \frac{m}{s}$

point 5 → 6

$\frac{-.2m - .3m}{.314s} = -1.59 \frac{m}{s}$

$KE = \frac{1}{2}mv^2$

$KE_1 = \frac{1}{2}(.1kg)\left(-5.14\frac{m}{s}\right)^2$
$= 1.466 J$

$KE_2 = \frac{1}{2}(.1kg)\left(4.14\frac{m}{s}\right)^2$
$= .857 J$

$KE_3 = \frac{1}{2}(.1kg)\left(-3.185\frac{m}{s}\right)^2$
$= .507 J$

$KE_4 = \frac{1}{2}(.1kg)\left(2.23\frac{m}{s}\right)^2$
$= .248 J$

$KE_5 = \frac{1}{2}(.1kg)\left(-1.59\frac{m}{s}\right)$
$= .127 J$

ΔKE

$\Delta KE_1 = KE_2 - KE_1$
$= .857 J - 1.466 (J)$
$= -.609 J$

$\Delta KE_2 = KE_3 - KE_2$
$= .507 J - .857 J$
$= -.35 J$

$\Delta KE_3 = KE_4 - KE_3$
$= .248 J - .507 J$
$= -.259 J$

$\Delta KE_4 = KE_5 - KE_4$
$= .127 J - .248 J$
$= -.121 J$

The loss of energy from peak to peak is about 50%.