start

4m

1.47 m

Position (m)

4
3
2
1
0
-1
-2
-3
-4

0   20   40   60   80   100

Time (s)

$t \cong 38\,s$

Mass $m = 6.2\,kg$ hangs from spring of force constant K.

Fred pulls mass $A = 4m$ from equilibrium, then releases. Its motion, showed at left, is slowed by air resistance.

$$\frac{A}{e} = \frac{4m}{2.718\ldots} = 1.47\,m$$

The graph shows that the amplitude decreases to $1.47\,m$ at $t \cong 38$ sec.

$$\rightarrow \boxed{\tau \cong 38 \ sec}$$

Since $\boxed{b = \dfrac{2m}{\tau}} \cong \dfrac{2\,(6.2\,kg)}{38\,s} \cong 0.33\,\dfrac{kg}{s}$