a) $m = 1.5 \, kg$
$k = 2000 \, N/m$
$x_1 = .30 \, cm = .0030 \, m$

$\boxed{1} \, U_{S_1}$

$\boxed{2} \, KE_2$

$\leftarrow v_2$

$KE_1 + U_{S_1} = KE_2 + U_{S_2}$

$0 + \frac{1}{2} \cdot k \cdot x_1^2 = \frac{1}{2} \cdot m \cdot v_2^2 + 0$

$\frac{1}{2} \cdot (2000 \, N/m)(.003 \, m)^2 = \frac{1}{2}(1.5 \, kg) \cdot$

$.009 \, J = \frac{1}{2}(1.5 \, kg) v_2^2$

$\boxed{V = .11 \, m/s}$

b) $m = 1.5 \, kg$
$x_1 = .0030 \, m$
$U_{S_1} = .009 \, J$ (from part a)
$F_f = 2.0 \, N$

Find Work by friction

$W = F_f \cdot d$
$= (2.0 \, N)(.0030 \, m)$
$W = .006 \, N \cdot m$

$KE_1 + U_{S_1} + W = KE_2 + U_{S_2}$

$0 + \frac{1}{2} \cdot k \cdot x_1^2 + W = \frac{1}{2} \cdot m \cdot v_2^2 + 0$

$(.009 \, J) + (-.006 \, J) = \frac{1}{2} \cdot (1.5 \, kg) \cdot v_2^2$

$\boxed{v = .063 \, m/s}$

c) $v_2 = 0 \, m/s$
$x_1 = .003 \, m$
$m = 1.5 \, kg$
$U_{S_1} = .009 \, J$ (from part a)

$KE_1 + U_{S_1} + W = KE_2 + U_{S_2}$

$0 + \frac{1}{2} \cdot k \cdot x_1^2 + F_f d = 0 + 0$

$(.009 \, J) + F_f \cdot (.003 \, m) = 0$

$\boxed{F_f = -3.0 \, N}$