6-2)
$gm_1 = 20N$ $gm_2 = 12N$ Constant speed -> constant velocity $\Delta x = +0.75m$ for each mass in its respective x-direction.

First, find the tension T. We'll use NII on Block Two:
$gM_2 – T = M_2a_x = 0$ so, $T = gM_2 = 10*1.2 = 12$ N.

For Block One, $+T – F_{fk} = M_1a_x = 0$,   so $F_{fk} = T = 12N$.
$F_N-gM_1 = M_1a_y = 0$ so $F_N = gM_1 = 10*2 = 20N$

a)
Work done on M_1 by its weight:
$W = gM_1 \Delta x \cos\theta = (10*2)*0.75*\cos(90^o) =$ 0J
b)
Work done by tension:
$W = T \Delta x \cos\theta = 12*0.75*\cos(0^o) =$ 9J
c)
Work done on M_1 by normal force:
$W = F_N \Delta x \cos\theta = 20*0.75*\cos(90^o) =$ 0J
d)
$W = F_{f\,k} \Delta x \cos\theta = 12*0.75*\cos(180^o) =$ -9J
e)
Work done by the weight of M_2:
$W = gM_2 \Delta x \cos\theta = (10*1.2)*0.75*\cos(0^o) =$ 9J
f)
Work done by the tension:
$W = T \Delta x \cos\theta = 12*0.75*\cos(180^o) =$ -9J
g)
Total work = 0 + 9 + 0 +(-9) = 0 J**.**
h) Total work = 9 + (-9) = 0 J.
Since the change in KE is zero, this is to be expected.