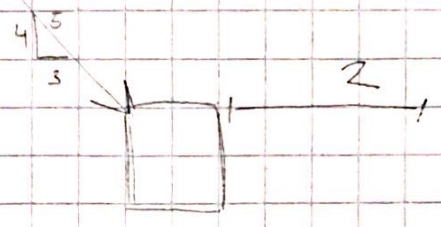
20-P-WE-AF-001-003

Preliminary Problems:

F14-1a:
001

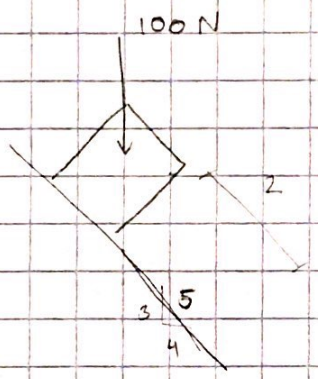


$\vec{F} = 300\hat{i} - 400\hat{j}$

$\vec{s} = 2\hat{i}$ $W = \vec{F} \cdot \vec{s}$

$W = (300\hat{i} - 400\hat{j}) \cdot 2\hat{i} = 600\hat{i} = 600\,J \Rightarrow 300 \cdot d$

F14-8d:
002



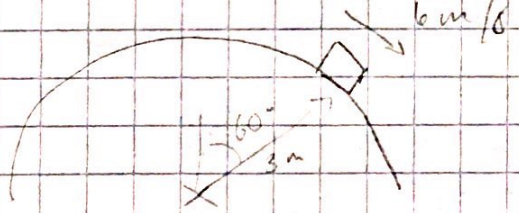
$\vec{F} = (-100\hat{j})\,N$

$\vec{s} = \left(2 \cdot \frac{4}{5}\hat{i} - 2\,\frac{3}{5}\hat{j}\right)$

$W = F \cdot s$
$= -100 \cdot (1.6\hat{i} - 1.2\hat{j})$
$= 0 + 100 \cdot 1.2$
$= 120\,J$

ans = $100 \cdot d \cdot \frac{3}{5}$

F14-2a:



$T = \frac{mv^2}{2}$

$= \frac{10 \cdot 6^2}{2}$

$= 180\,J$