(2) $x^2 + h^2 = s^2$

$2x\frac{dx}{dt} = 2s\frac{ds}{dt}$

已知 $\frac{ds}{dt} = -3$, $V_x = -\frac{3s}{x}$

$= -\frac{3s}{\sqrt{s^2-h^2}}$

当5秒时, $s = 40 - 5(3)$

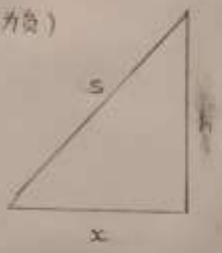
$= 25$ m

$V_x = -\frac{3(25)}{\sqrt{25^2-20^2}}$

$= -5$ m/s

速度大小为 5 m/s，方向向右

（向右为负）



$\left(\frac{dx}{dt}\right)^2 + x\frac{d^2x}{dt^2} = \left(\frac{ds}{dt}\right)^2 + s\frac{d^2s}{dt^2}$

收绳速度不变, $\frac{d^2s}{dt^2} = 0$

$\frac{d^2x}{dt^2} = a_x = \frac{(3)^2 - (-5)^2}{x}$

$= \frac{-16}{\sqrt{25^2-20^2}}$

$= -1.1\ ms^{-2}$

加速度大小为 $1.1\ ms^{-2}$，方向向右