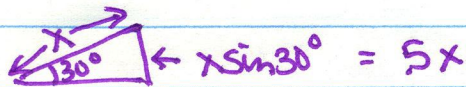


$$k = 117.6 \text{ N/m}$$

	$\frac{1}{2}mv^2$	$mgh$	$\frac{1}{2}kx^2$	TOTAL
release	0	$(2)(9.8)(1)$	0	19.6
most compressed	0	$2(9.8)(1 - .5x)$	$\frac{1}{2}(117.6)x^2$	$9.8 - 9.8x + 58.8x^2$

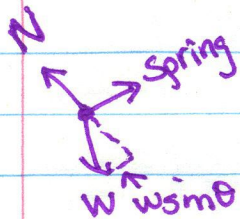


Conservation of Energy  $19.6 = 9.8 - 9.8x + 58.8x^2$

$$6x^2 - x - 1 = 0$$

$$x = \frac{1 \pm \sqrt{1^2 - 4(6)(-1)}}{2(6)} = \frac{1 \pm 5}{12} = .5 \quad \text{positive root}$$

$$\underline{\underline{x = .5 \text{ m}}}$$



$$mg \sin \theta = kx$$

$$(2)(9.8)(.5) = 117.6x$$

$$\underline{\underline{.083 \text{ m} = x}}$$