PHYSICAL SETTING
PHYSICS

Wednesday, June 13, 2012 — 1:15 to 4:15 p.m., only

ANSWER BOOKLET

☐ Male

Student . . . .   Sex: ☐ Female

Teacher . . . .

School . . . .   Grade . . . .

Record your answers for Part B–2 and Part C in this booklet.

Part B–2

51 ___ 20 ___ N/m

$$F_s = kx \qquad k = \frac{F_s}{x}$$

$$k = \frac{8N}{.4m}$$

$$= 20 \frac{N}{m}$$

52–53

$$PE_s = \frac{1}{2} k x^2$$

$$= \frac{1}{2} \left(20 \frac{N}{m} \right) (.3m)^2$$

$$= .9 \, Nm \quad \text{or} \quad .9 \, J$$

54–55

$$t = ?$$

$$F = 6000 \, N$$

$$M = 1200 \, kg$$

$$V_i = 10 \, ^m/_s$$

$$J = F_{net} \, t = \Delta p$$

$$t = \frac{\Delta p}{F_{net}} = \frac{MV}{F_{net}}$$

$$= \frac{(1200 \, kg)(10 \, ^m/_s)}{6000 \, N}$$

$$= 2 \, s$$