

P 1051 Winter 2010

1 (a) 1.20 m/s

1 (b) 10.0 m

1 (c) 8.34 s

2 (a)  $-0.000675 \text{ Am}^2 \mathbf{k}$

2 (b) 0.000818 Nm

3 (a)  $\mathbf{E} = 0$

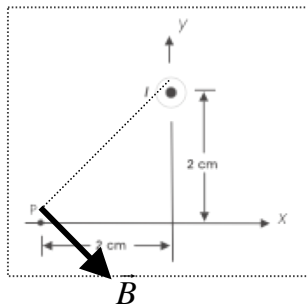
3 (b)  $1.20 \times 10^6 \text{ V}$

3 (c)  $1.92 \times 10^{-13}$  (positive)

4 (a)  $-3.40 \mathbf{i} - 5.95 \mathbf{j}$

4 (b)  $6.57 \times 10^8 \text{ m/s}^2$

5 (a)



5 (b)  $3.75 \times 10^{-6} (\mathbf{i} - \mathbf{j})$

6 (a)  $-390,000 \text{ N/C } \mathbf{j}$

6 (b) 975 V (positive)

7 (a) (i)  $\pi$  or  $180^\circ$

7 (a) (ii)  $\pi$  or  $180^\circ$

7 (a) (iii)  $1.06 \times 10^{-7} \text{ m}$

7 (b) (i)  $d \sin \theta$

7 (b) (ii)  $3.82^\circ$

8 (a) (i)  $\frac{v}{2L} = 2f_o$

8 (a) (ii) 128 Hz

8 (a) (iii) 0.670 m

8 (b) (i) 508 Hz

8 (b) (ii) 45.7 g

9 (a) 0.0735 V

9 (b) counterclockwise

9 (c) 0.294 A