

Answers to the Review #3 problems for Chapters 27-29

27-R1: $B_x = +0.4\text{T}$, $B_y = -0.8\text{T}$, B_z undetermined

27-R2: Correct C

27-R3: $B = 1.5\text{T}$ directed into the plane; $m = 8 \times 10^{-26} \text{ kg}$

27-R4: $\tau = 0.95 \text{ N}\cdot\text{m}$

27-R5: $\tau = 0.44 \text{ N}\cdot\text{m}$

28-R1: Correct D

28-R2: Correct B

28-R3: $\vec{B} = (-4.0 \times 10^{-6} \text{ T}) \cdot \hat{x} + (-4.0 \times 10^{-6} \text{ T}) \cdot \hat{z}$

28-R4: (a) $\vec{B} = -2 \times 10^{-5} \text{ T} \cdot \hat{y}$ (b) $\vec{B} = -1.5 \times 10^{-5} \text{ T} \cdot \hat{x}$

28-R5: (a) $I_w = 0.21 \text{ A}$ (b) direction from bottom to top

29-R1: Correct A

29-R2: $I = 58.2 \text{ mA}$ from b to a

29-R3: from a to b

29-R4: (a) $\Phi_B = 0.0312 \text{ Wb}$; (b) $emf = 13.19 \text{ V}$

29-R5: (a) counterclockwise; (b) $F_{ext} = 0.252 \text{ N}$