

(6.7) Calculate the spins and nuclear g factors for (a)  $^{45}\text{Ca}$ , (b)  $^{60}\text{Co}$ , and (c)  $^{141}\text{Pr}$ , using data in Table 6.3.

$$B_n := 5.050787 \cdot 10^{-27} \cdot \text{joule} \cdot \text{tesla}^{-1} \quad \text{Definition of } \mathbf{B}_n$$

$$g(I, \mu) := \frac{\mu}{B_n \cdot I} \quad \text{Function defined according to eqn. (6.27)}$$

$\mu_I$  for  $^{45}\text{Ca}$  is  $-1.3274$  in Table 6.3.

$$\text{(a) } ^{45}\text{Ca}, I = 7/2, \mu_I = -1.3274 \cdot \mathbf{B}_n \quad I_{Ca} := \frac{7}{2} \quad g(I_{Ca}, -1.3274 \cdot B_n) = -0.379$$

$$\text{(b) } ^{60}\text{Co}, I = 5, \mu_I = 3.799 \cdot \mathbf{B}_n \quad I_{Co} := 5 \quad g(I_{Co}, 3.799 \cdot B_n) = 0.76$$

$$\text{(c) } ^{141}\text{Pr}, I = 5/2, \mu_I = 4.136 \cdot \mathbf{B}_n \quad I_{Pr} := \frac{5}{2} \quad g(I_{Pr}, 4.136 \cdot B_n) = 1.654$$