Problem 1. a) $(0, 0), (0, -2), \text{ and } (-1/2, 2)$

b) All three points are saddles.

Problem 2. $\frac{101}{4}$

Problem 3. $x_c = -\frac{3}{5}, \ y_c = -\frac{1}{2}$.

Problem 4. $\frac{1}{4} \sin(16)$

Problem 5. $4\pi$

Problem 6. $\sqrt{3}$

Problem 7. $1050$

Problem 8. $-\frac{5}{8}$.

Problem 9.

$$\int_{0}^{3} \int_{0}^{(\frac{1}{2})} \int_{0}^{(2-2x-\frac{2}{3}z)} (x + 5y + 7z) \ dy \ dx \ dz$$

Problem 10. $-18$

Problem 11. $2\pi (2\sin(1) + \cos(1) - 2)$