Corrected: I remembered to put in the problems from the book!
Recommended problems from the book: 5-17 odd, 23,25,29,39,41,43.

1. Find the directional derivative of $x^2 \sin(xy) + y \sin(yz)$ at the point $(\frac{\pi}{2}, 1, 0)$ in the direction of the vector $(1, 2, 2)$.

2. Find the maximum rate of change of $x^2 + 2xy^2 - yz$ at the point $(1, -1, 2)$ and determine the direction in which it occurs.

3. Find the tangent plane and normal line to the surface

$$x^2 + xy + 2y^2 + 3yz = 7$$

at the point $(1, 1, 1)$. 