If you are looking for review materials, practice MCQs and FRQs and full length practice exams, consider Ms. Wuerth's book *Barron's AP Biology*, she hopes you find it useful!

AP Daily Video 4.2 - Introduction to Signal Transduction

1. Signal transduction pathways link _____ to _____
2. The three steps in all signal transduction pathways are _____, _____ and _____
3. What is reception?
4. What is transduction?
5. What is response?
6. Many signal transduction pathways include protein _____ and _____ _____ Examples of this include:
    a. Regulating protein synthesis by _____ in the nucleus
    b. Regulating activity of proteins in the _____
    c. _____ of molecular interactions that send signals from receptors to _____ _____
    d. Phosphorylation cascades that _____
7. Key to the binding of a ligand to a receptor is _____
8. When a ligand binds to a G-protein coupled receptor, GDP is converted into _____, this then can activate other proteins in the cell (the example shows the protein _____ _____ being activated)
9. Signaling cascades can _____ signals, increasing the effect of the ligand.
10. cAMP (cyclic AMP) is an example of a _____ messenger
11. When the ligand binds, the intracellular (inside the cell) domain of the receptor protein changes _____, which starts the _____ of the signal.
12. Ligand-gated ion channels may _____ or _____ when the ligand binds.
13. Draw the picture showing the difference between the protein ligand signal transduction pathway and the steroid ligand signal transduction pathway.

14. What is the major difference between the protein and steroid signal transduction pathway?
15. In the multiple choice question at the end of the video, what describes the role of metfomin in the signal transduction pathway?
16.