

**Set 13 – due 8 December**

“The laws of Nature are written in the language of mathematics,” attributed to Galileo by E. Wigner

1) [10 points] Jackson 7.12. (a)–5, (b)–5.

2) [15 points] Jackson 7.13. (a)–10, (b)–5. Assume a flat earth. Amateur radio operators call this phenomenon “skip” (as in a stone skipping on the surface of a lake). You can hear the same effect on AM radio on winter nights.

3)[20 points] Jackson 7.22. (a)–10, (b)–10. In part (b), assume  $\omega_0 > \gamma/2$ .