1. Let \( s = AACGAT \) and \( t = ACTCT \). Let scores be 3 for match an -2 for mismatch and use the gap penalty function \( \gamma(g) = -3g \). Find an optimal global alignment of \( s \) with \( t \).

2. Let \( s = AACAGTATCGCT \) and \( t = CAGGTAT \). Let scores be 3 for match an -2 for mismatch and use the gap penalty function \( \gamma(g) = -g \). Find an optimal local alignment of \( s \) with \( t \).

3. Let \( s = PHAAWAE \) and \( t = APEAWE \). Use the gap penalty function \( \gamma(g) = -3g \) and the scores from Example 42 in Notes to find
   - an optimal global alignment of \( s \) and \( t \),
   - an optimal local alignment of \( s \) and \( t \).

4. Find an optimal global alignment of \( PHAWE \) with \( HHWAWE \). Use the gap penalty function \( \gamma(g) = -4g \) and PAM250 as a scoring matrix.

5. Repeat the previous exercise with local instead of global alignment.

6. Find an optimal global alignment of \( s = AACAG \) with \( t = ATCCGA \) and scores 3 for match and -2 for mismatch but with the gap penalty function \( \gamma(g) = -2 - g \).

7. Repeat the previous one for another pair of strings (your choice) keeping the same scores.