

A) ...TGAGACGAACTGATCGGAAGAGCACA
 ...TCTTAGTGCAAAGATCGGAAGAGCGT

TGAG - template sequence
 GATC - adapter sequence
 GATC - adapter contamination
 GA-TC - gap (indel)
 GAAGC - mismatch
 ACGCT - trimmed sequence

B) GATCGGAA-GAGCACACGTCTGAACTCCAGTCAC
 ...TGAGACGAACTGAGCGGAAAGAGCACA
 AGATCGGAAGAGCGTCGTGTAGGGAAAGAGTGT
 ...TCTTAGTGCAAAGATCGG-AGACCGT

C) TTGCACTAAGATCGTGAGACGAACTGATCGGAAGAGCACA overhang
 ACGCTCTTCCGATCTTTGCACTAAGAACGTGAGACGAACT

D) 1/5 bp match, adapters found in overhangs (**poor match**)
 TTGCACTAAGATCGTGAGACGAACTGATCGGAAGAGCACA
 ACGCTCTTCCGATCTTTGCACTAAGAACGTGAGACGAACT

9/34 bp match, adapters not found in overhangs (**poor match**)
 TTGCACTAAGATCGTGAGACGAACTGATCGGAAGAGCACA
 ACGCTCTTCCGATCTTTGCACTAAGAACGTGAGACGAACT

23/25 bp match, adapters found in overhangs (**best match**)
 TTGCACTAAGATCGTGAGACGAACTGATCGGAAGAGCACA
 ACGCTCTTCCGATCTTTGCACTAAGAACGTGAGACGAACT

E) GATCGGAAGAGCACACGTCTGAACTCCAGTCAC
~~GATCGGAAGAGCTCACGTCTGAAGGCCAGTCACAAAAAACNNNANC...~~
~~AGATCGGAAGAGCGTC-TGTAGGGATAGAGTGTAAAAAAAAAANNTC...~~
 AGATCGGAAGAGCGTCGTGTAGGGAAAGAGTGT → Discarded Read Pair