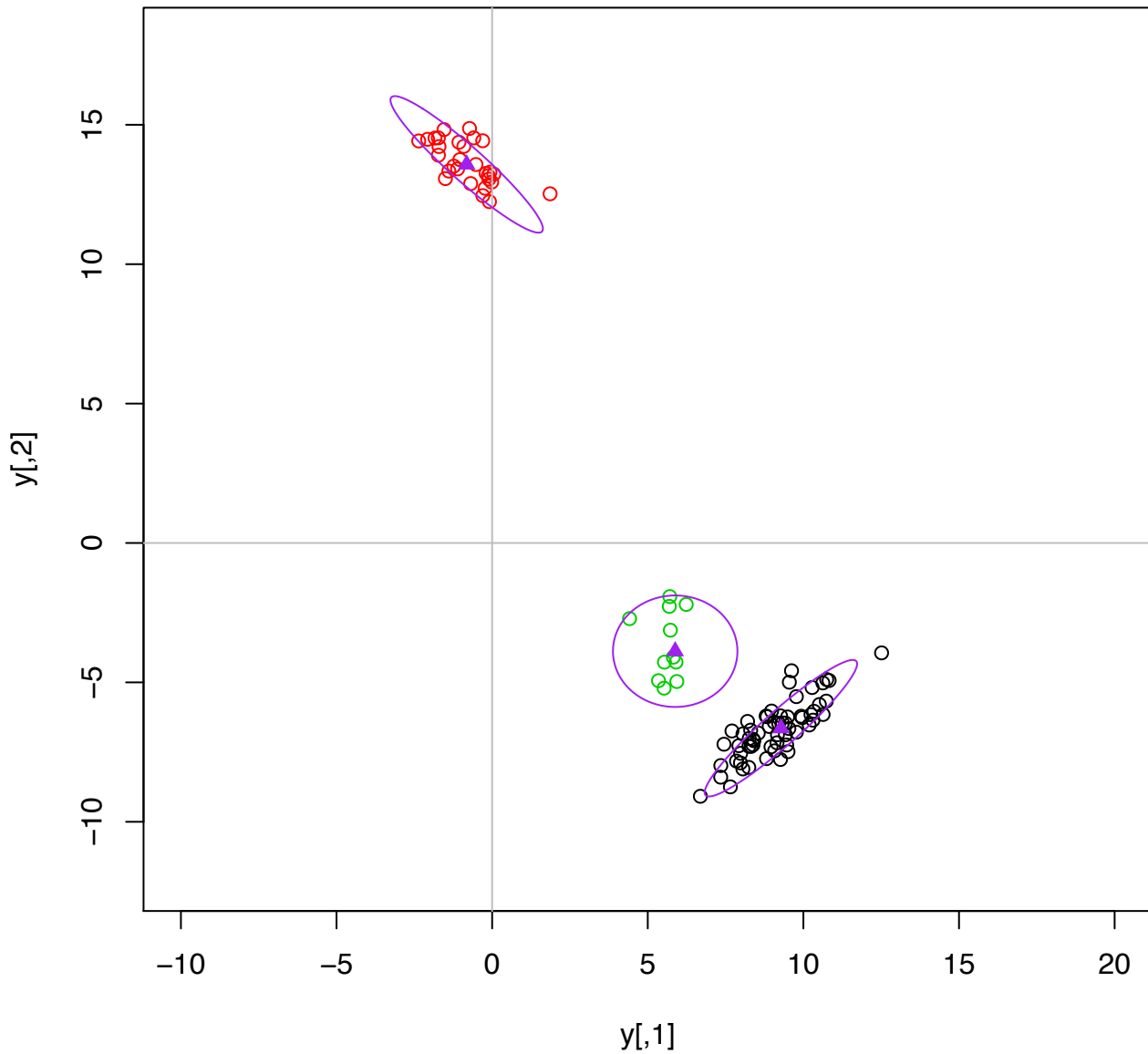**true cluster means: purple triangles**
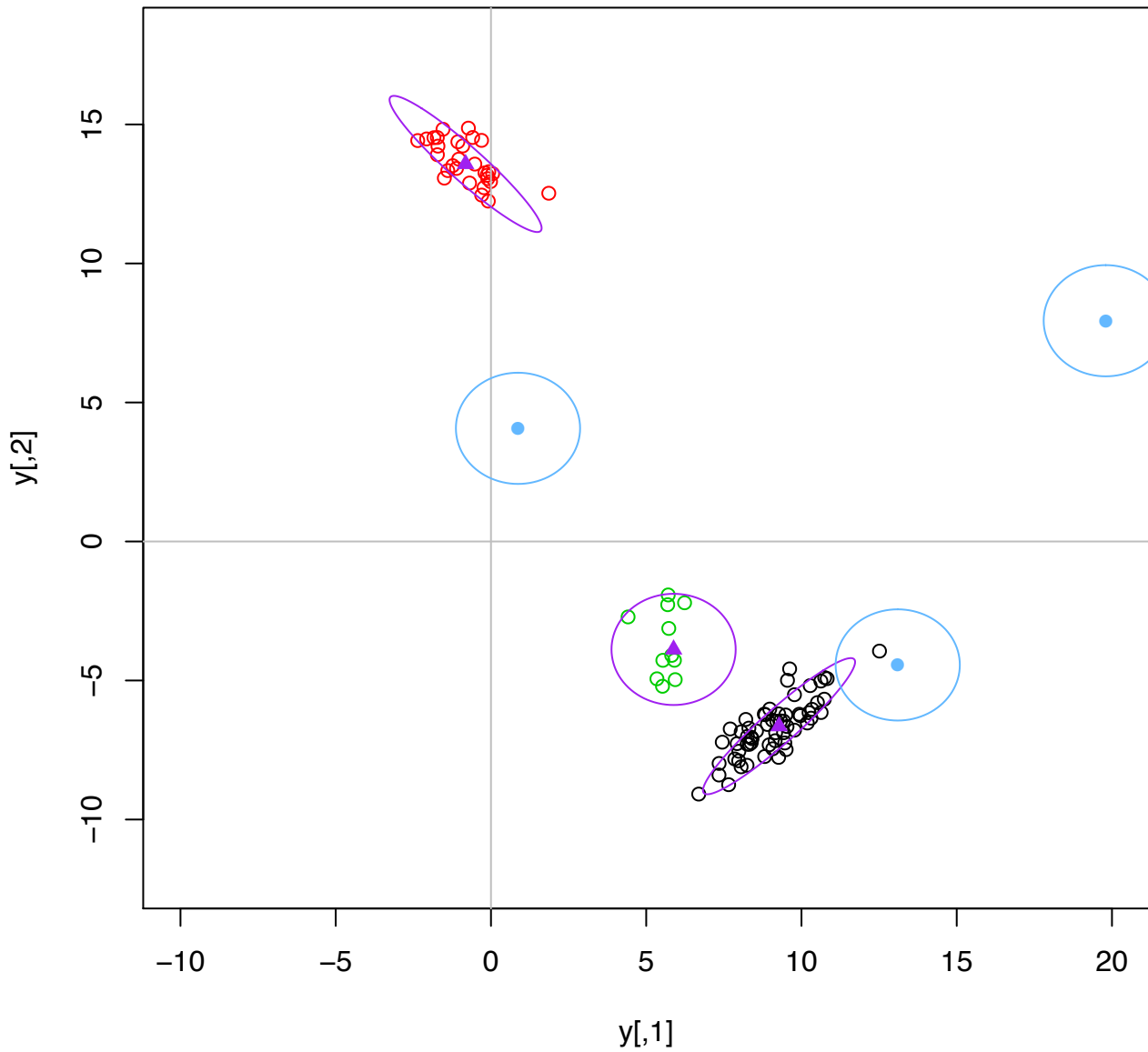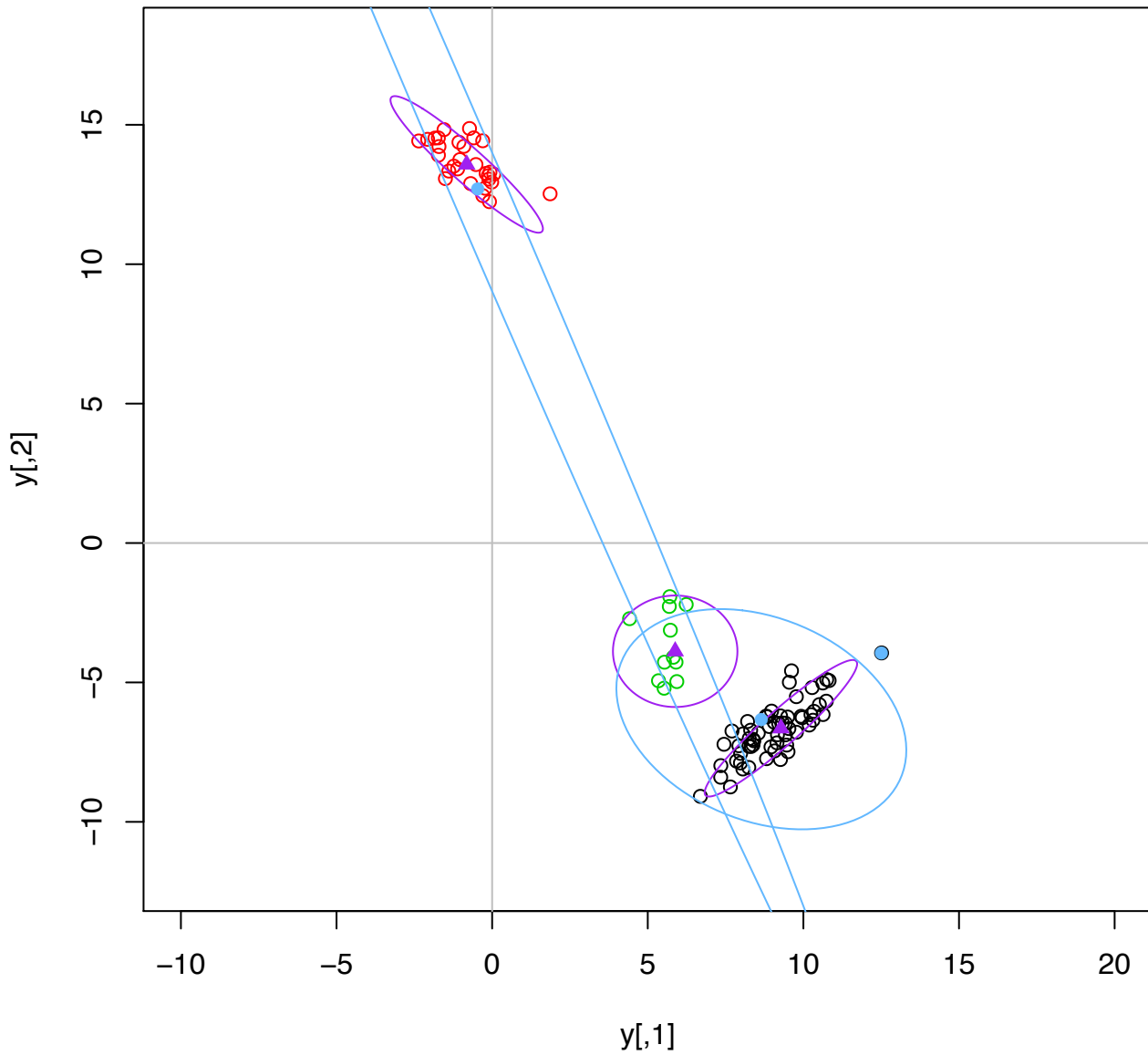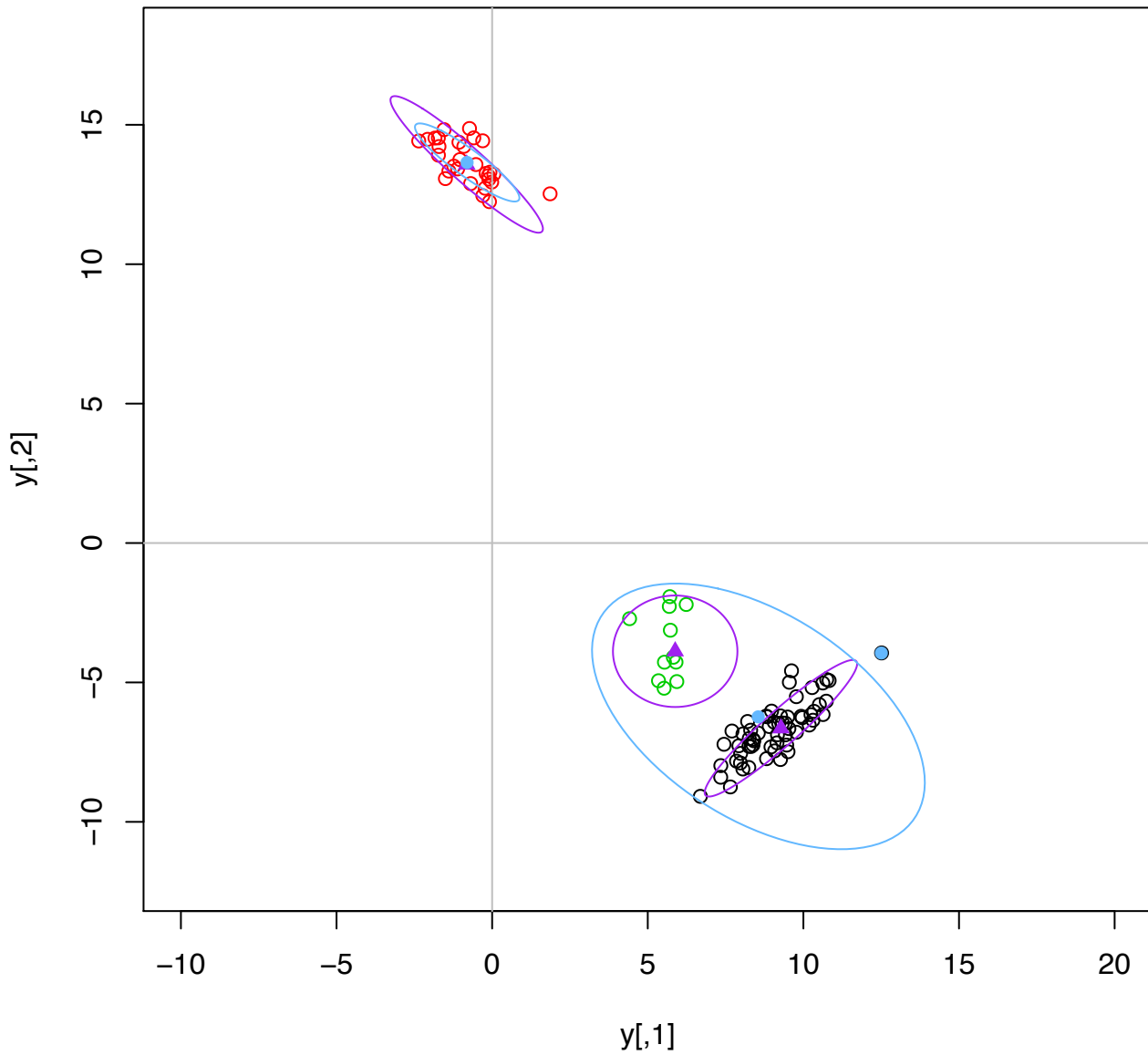
iteration #1:   Q = −2508.32430698227
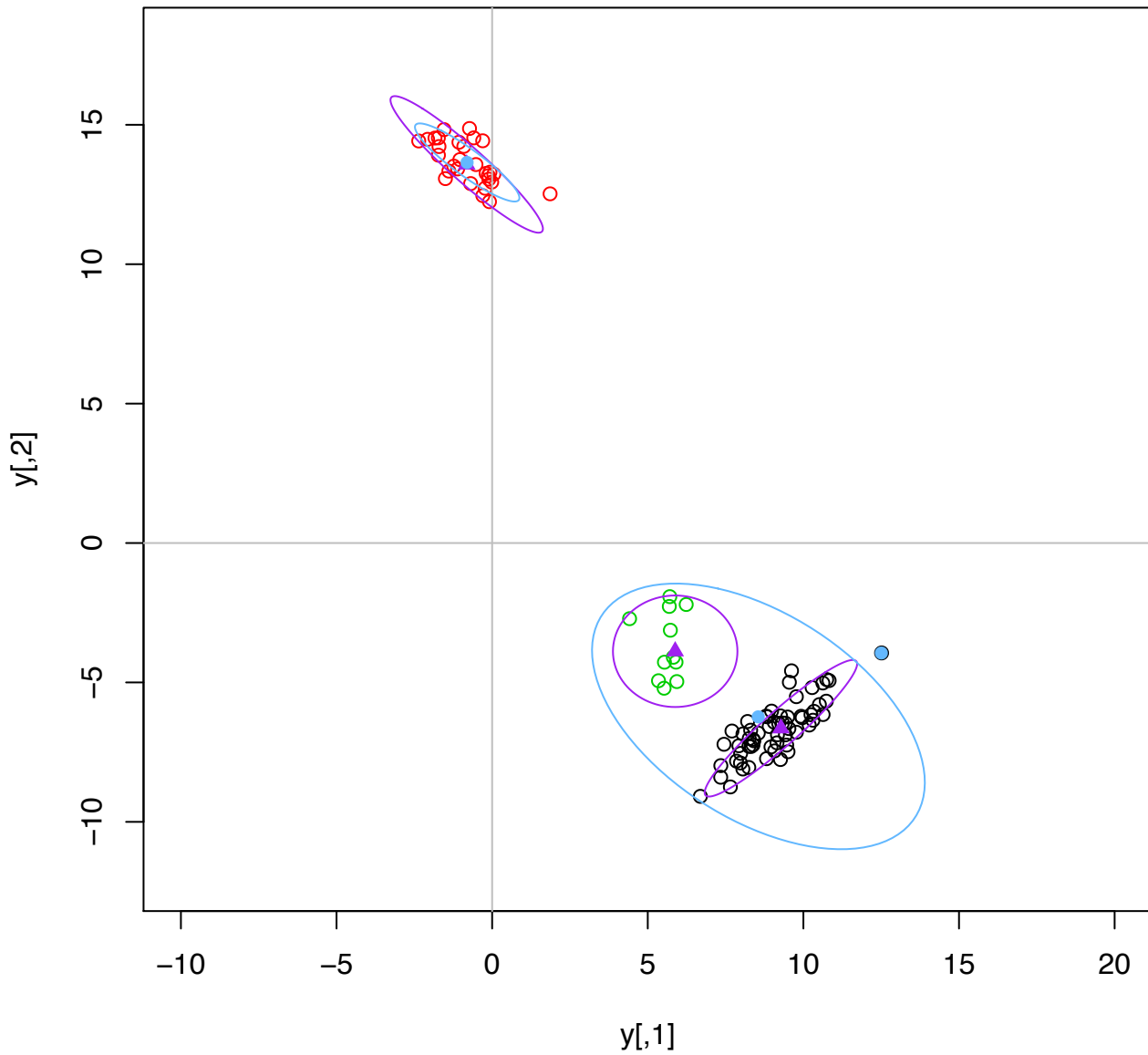
iteration #2:   Q = −238.505524115329

iteration #3:   Q = −200.655854737527

iteration #4:   Q = −200.655854737527

iteration #5:   Q = −200.655854737527

iteration #6:   Q = −200.655854737527

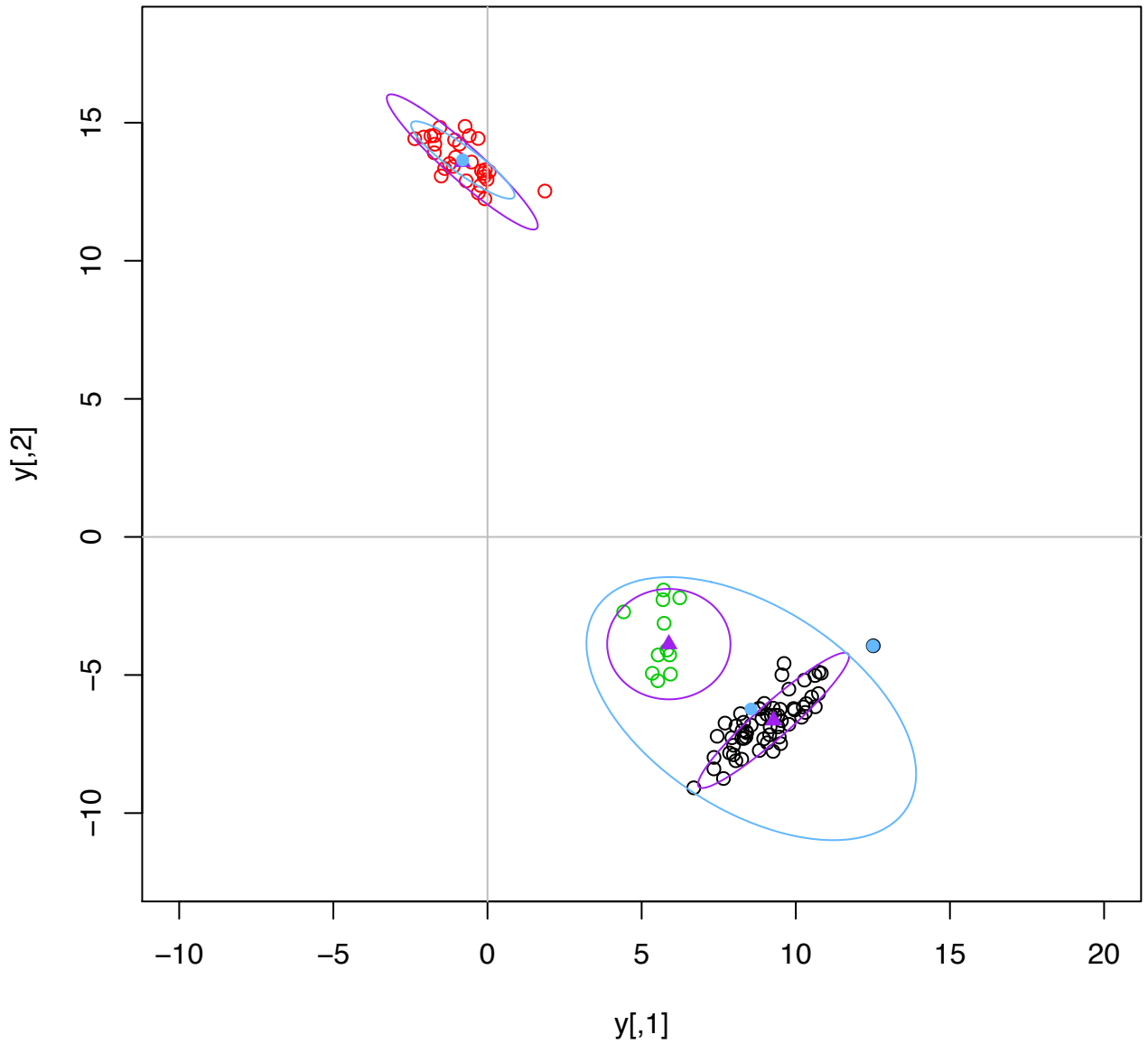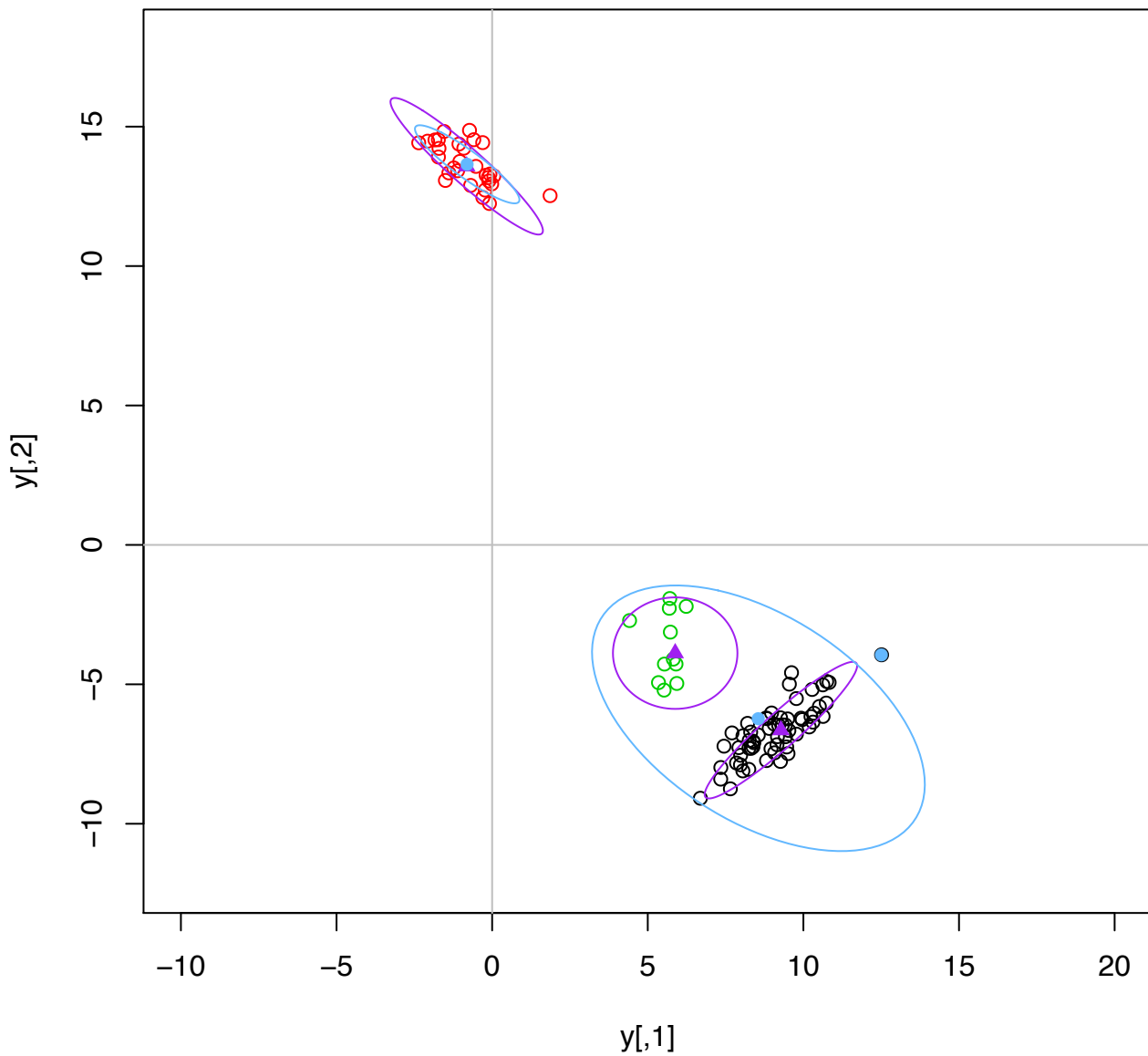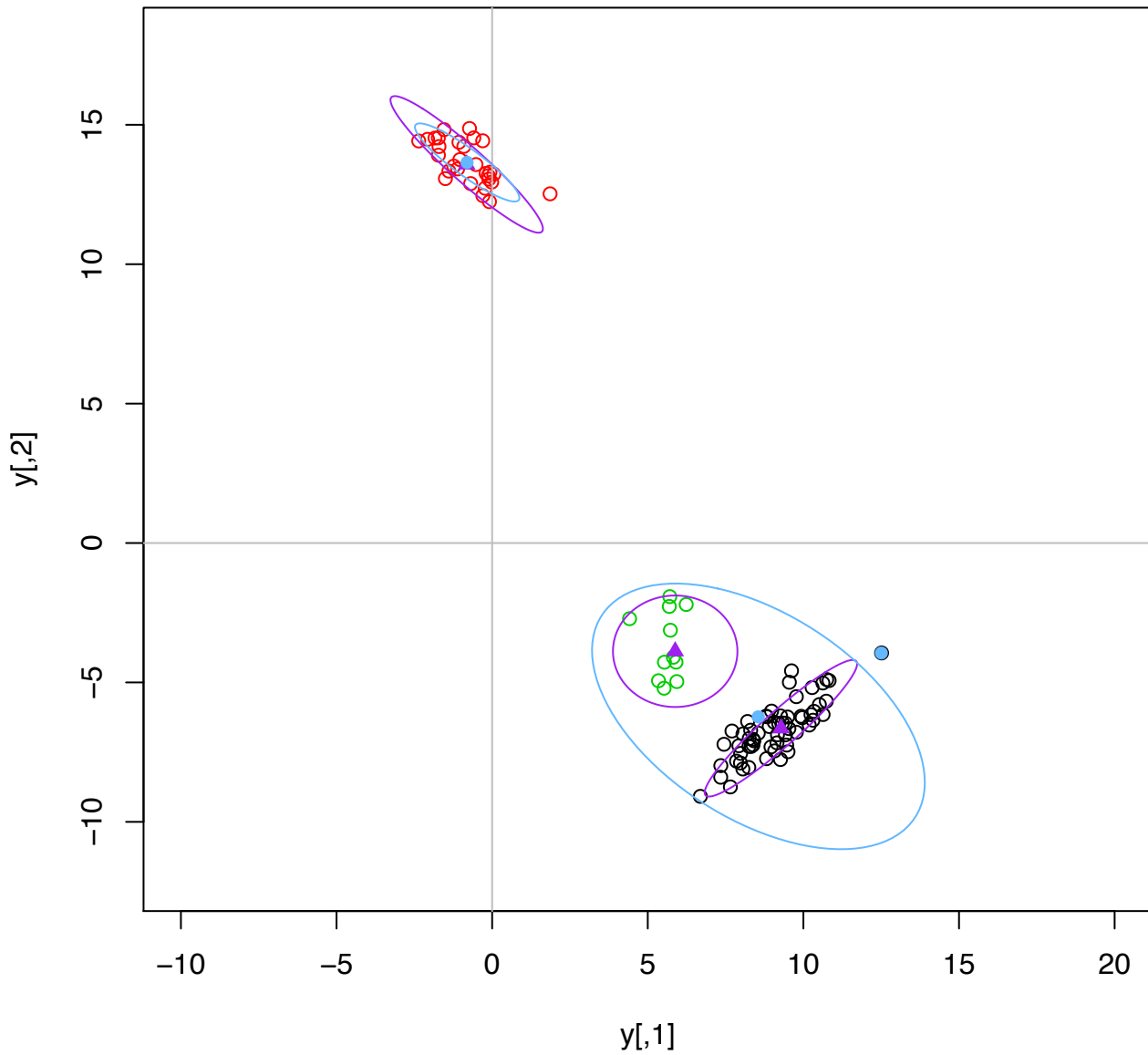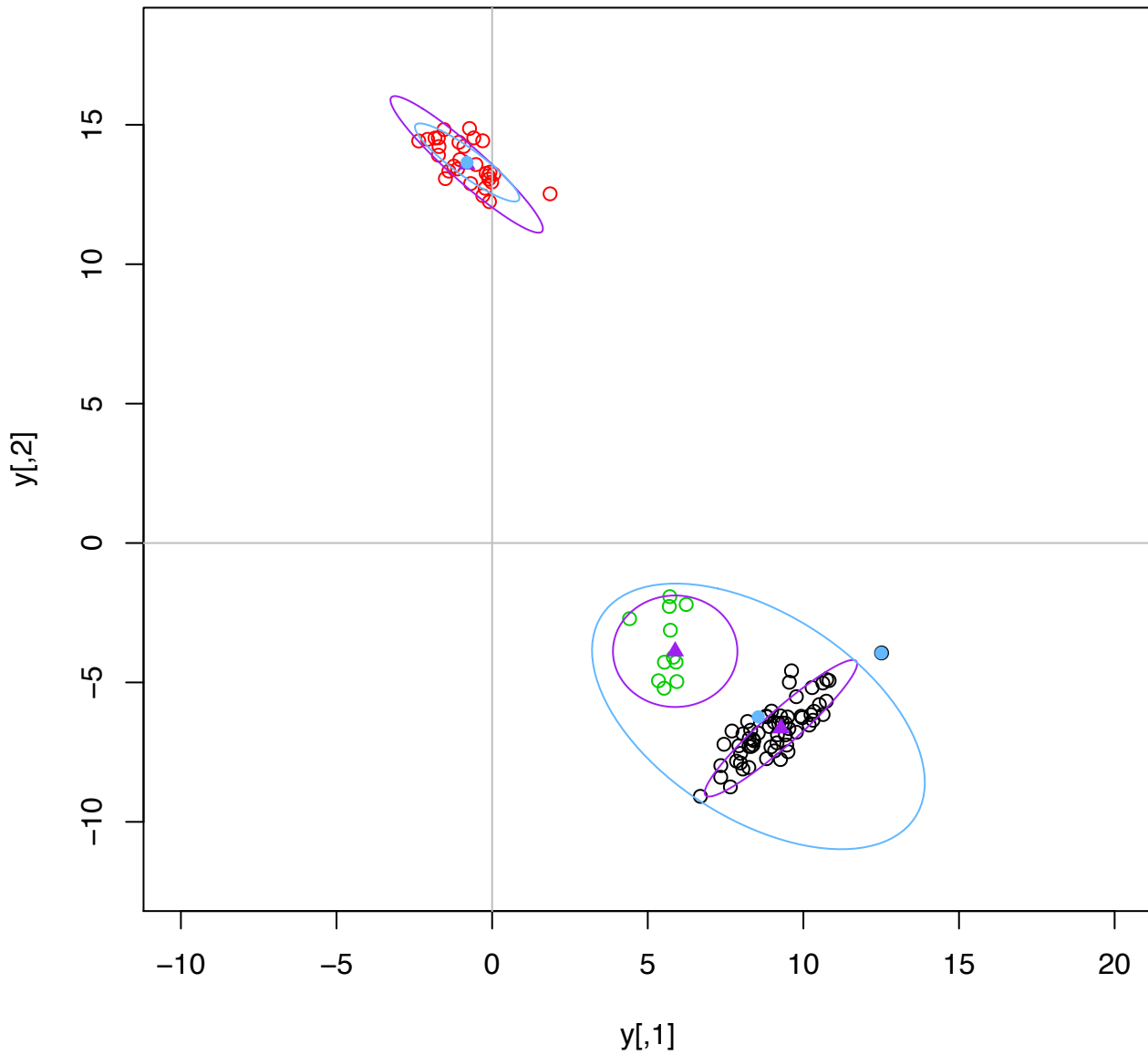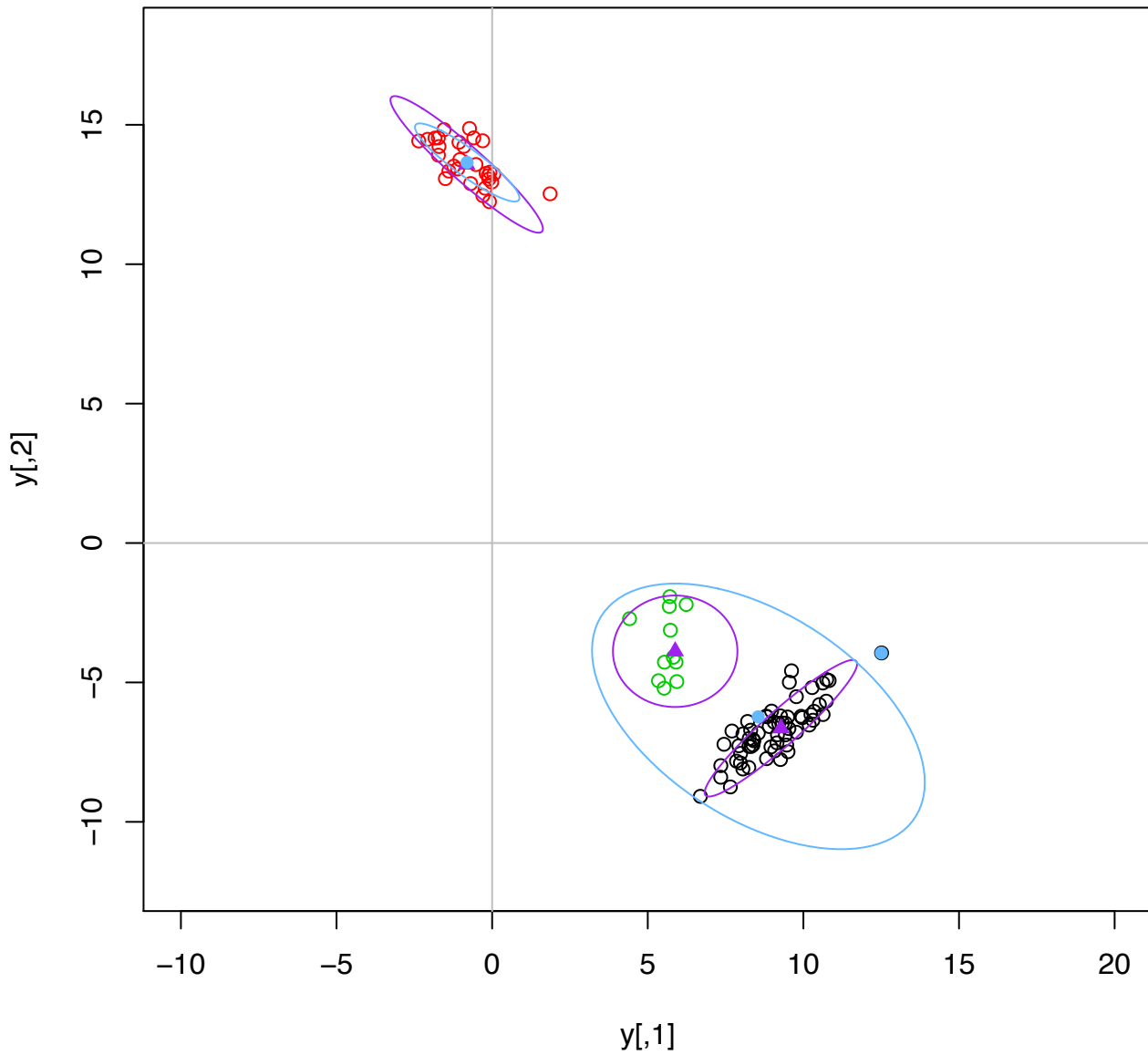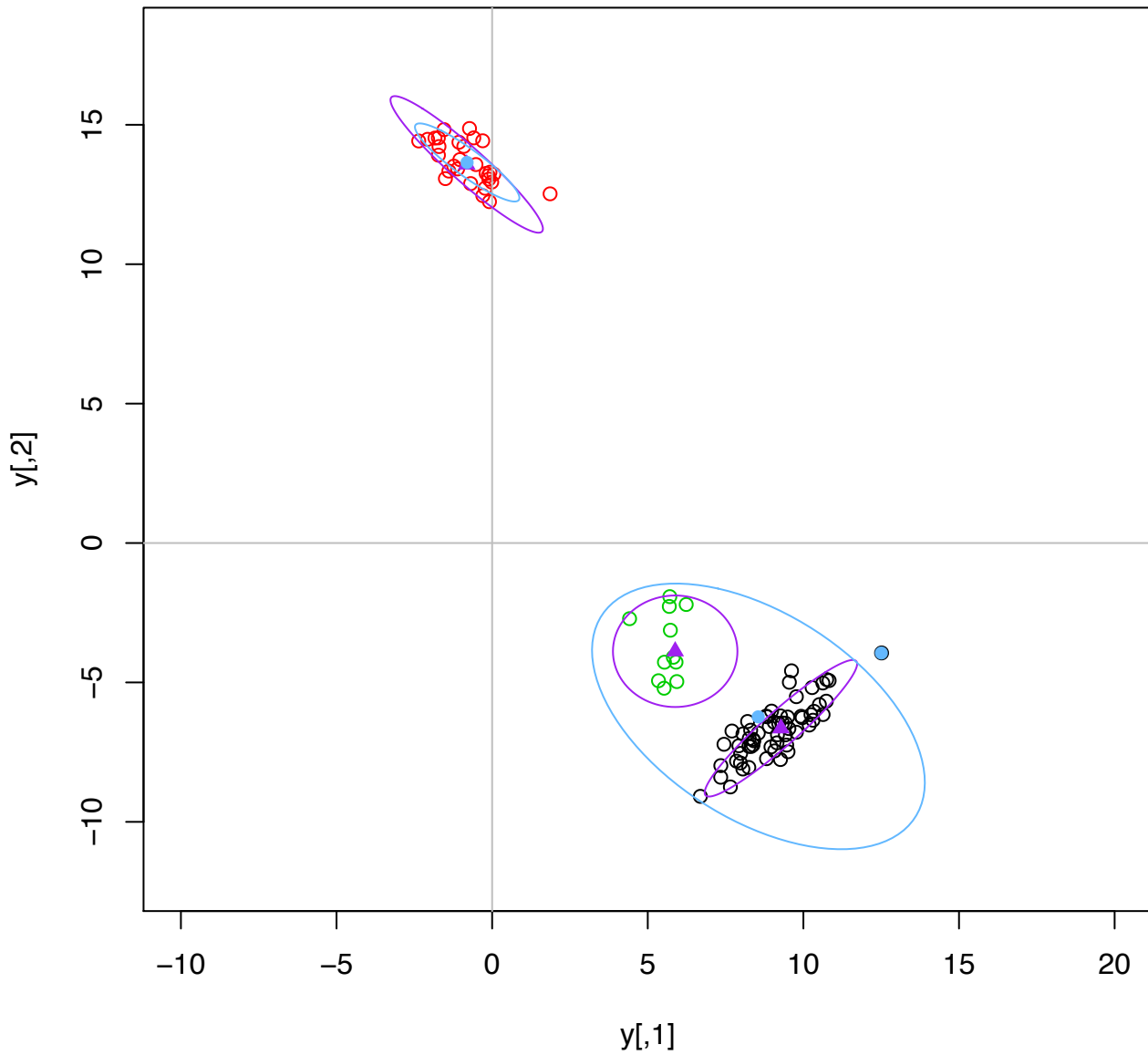**iteration #7:   Q = −200.655854737527**

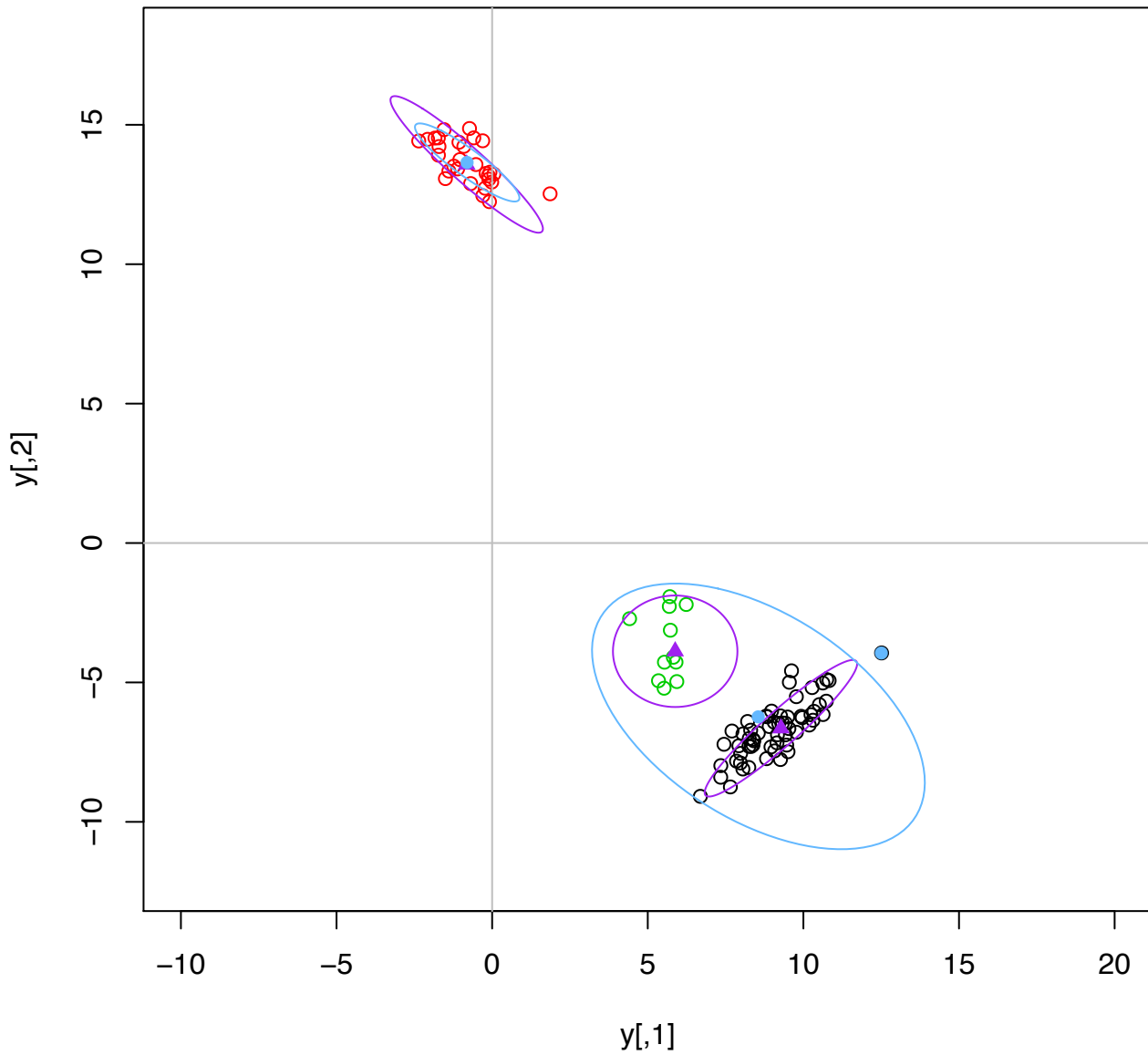**iteration #8:   Q = −200.655854737527**

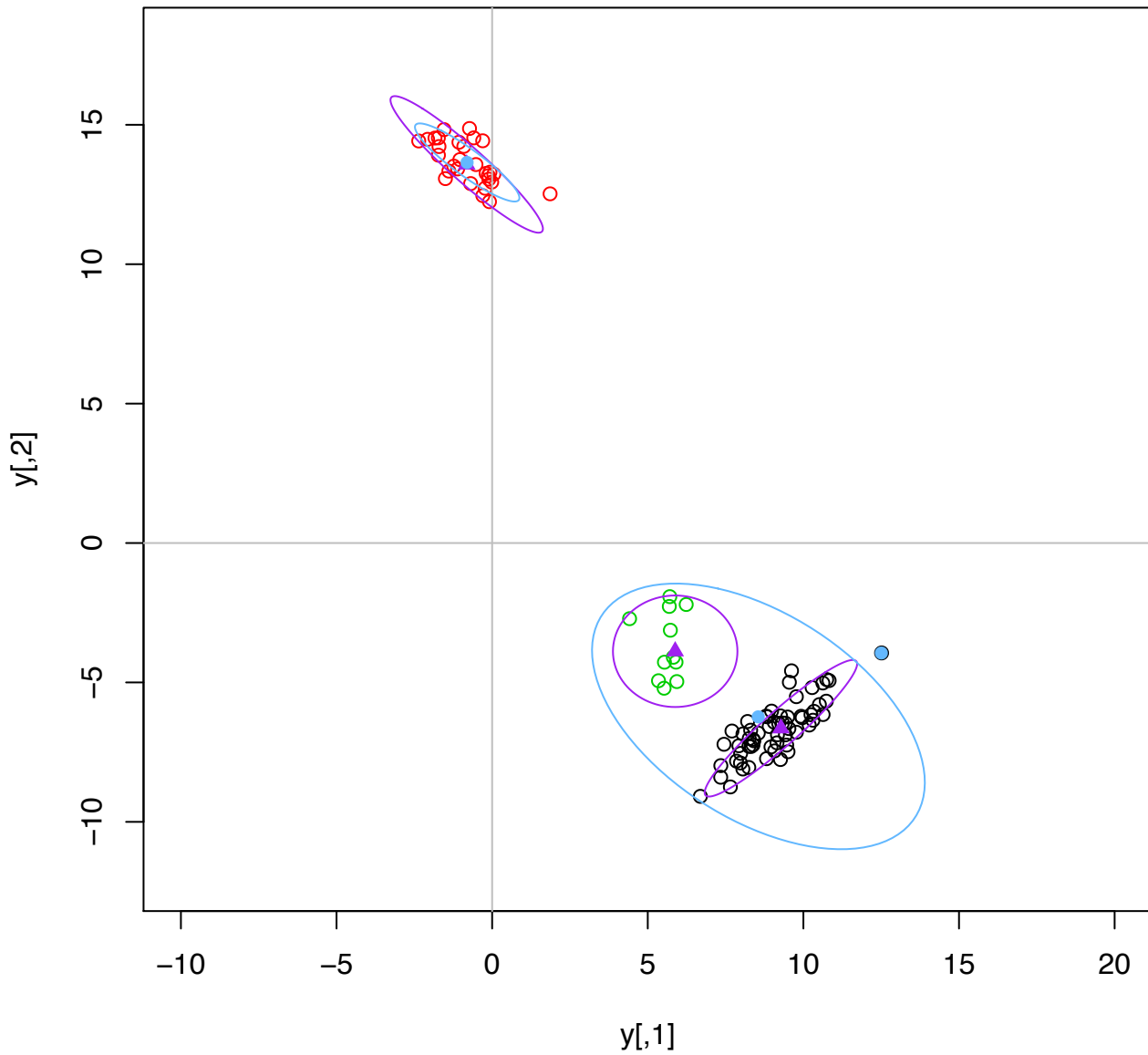**iteration #9:   Q = −200.655854737527**

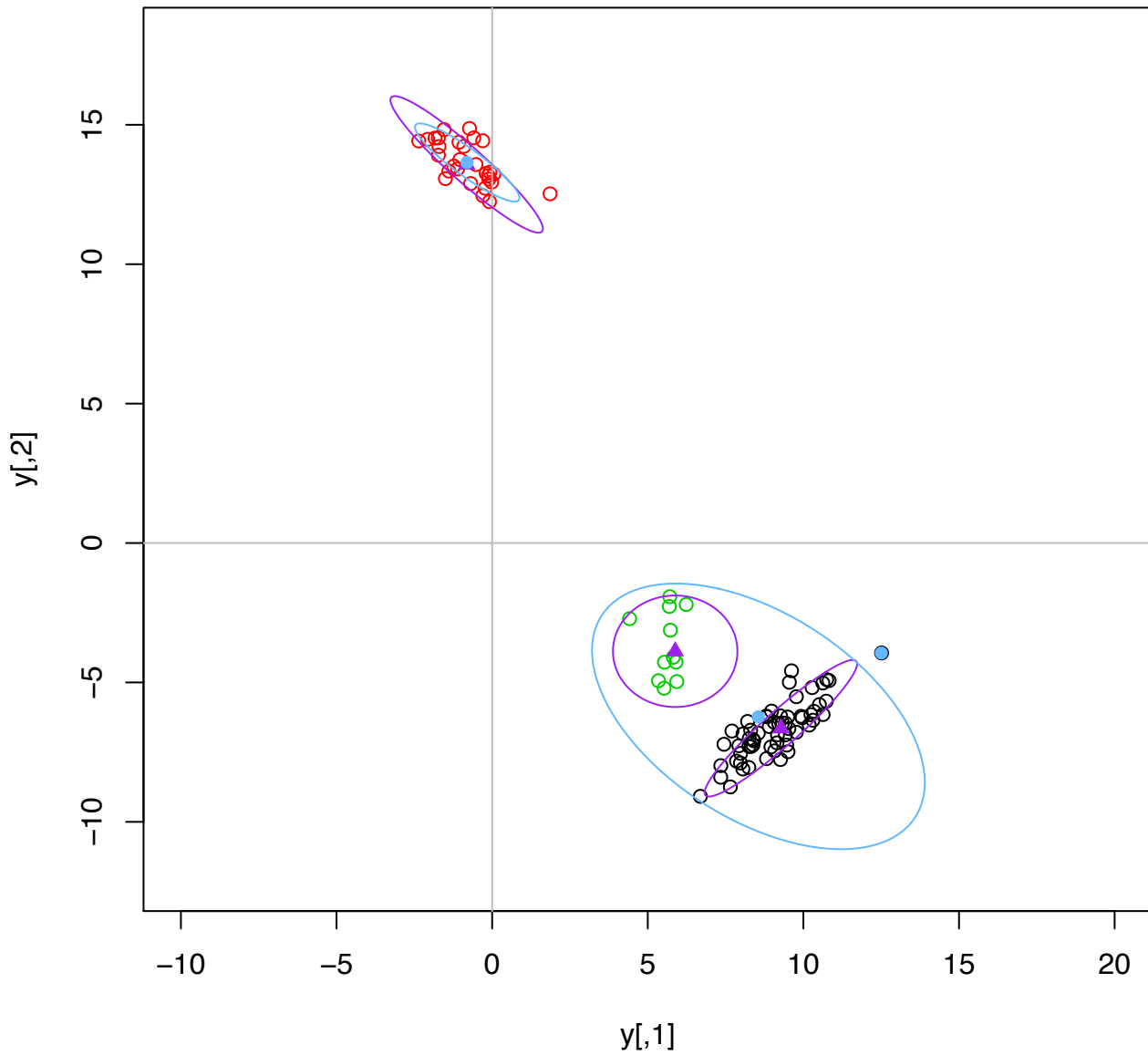**iteration #10:   Q = −200.655854737527**

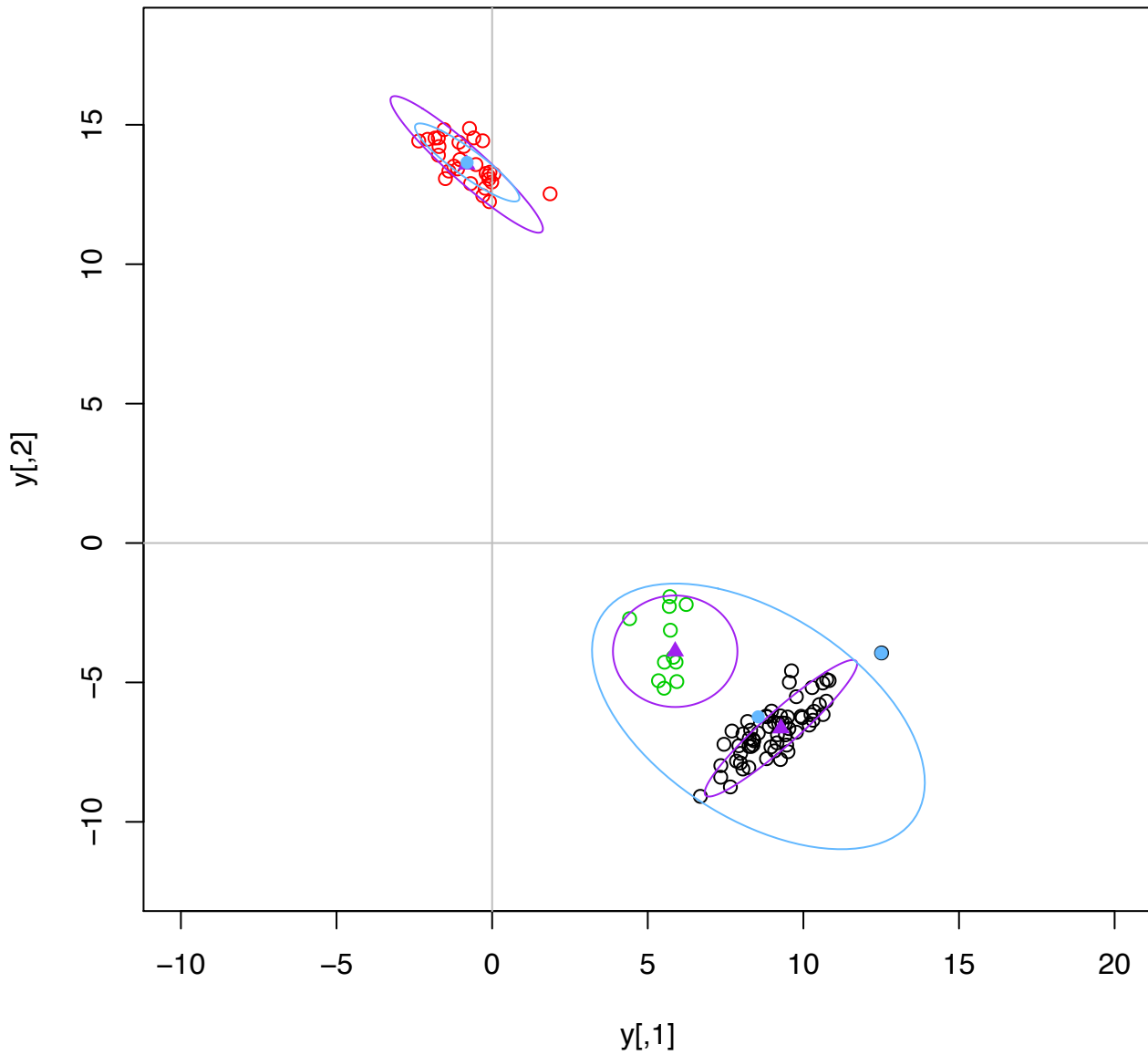**iteration #11:   Q = −200.655854737527**

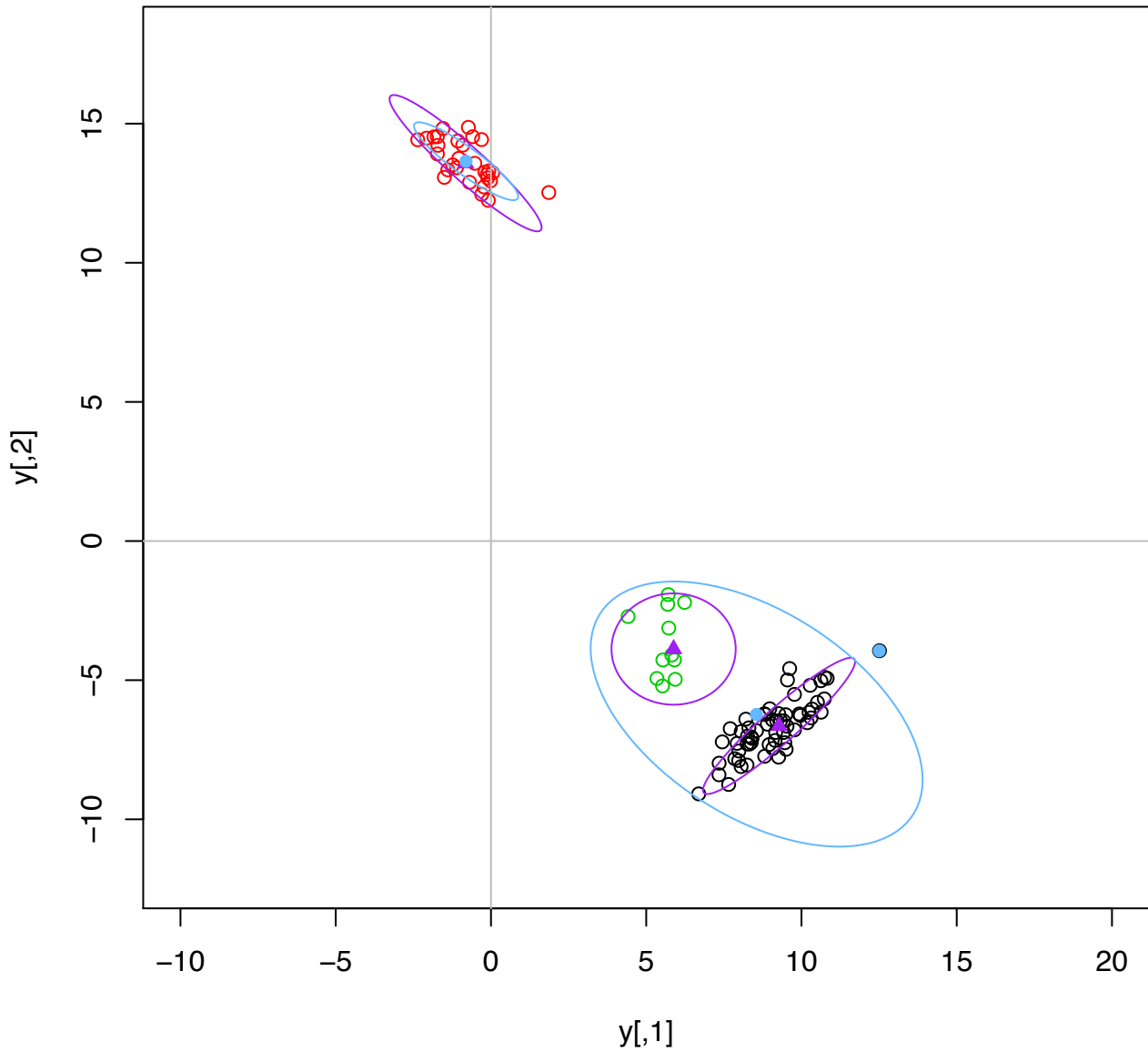**iteration #12:   Q = −200.655854737533**

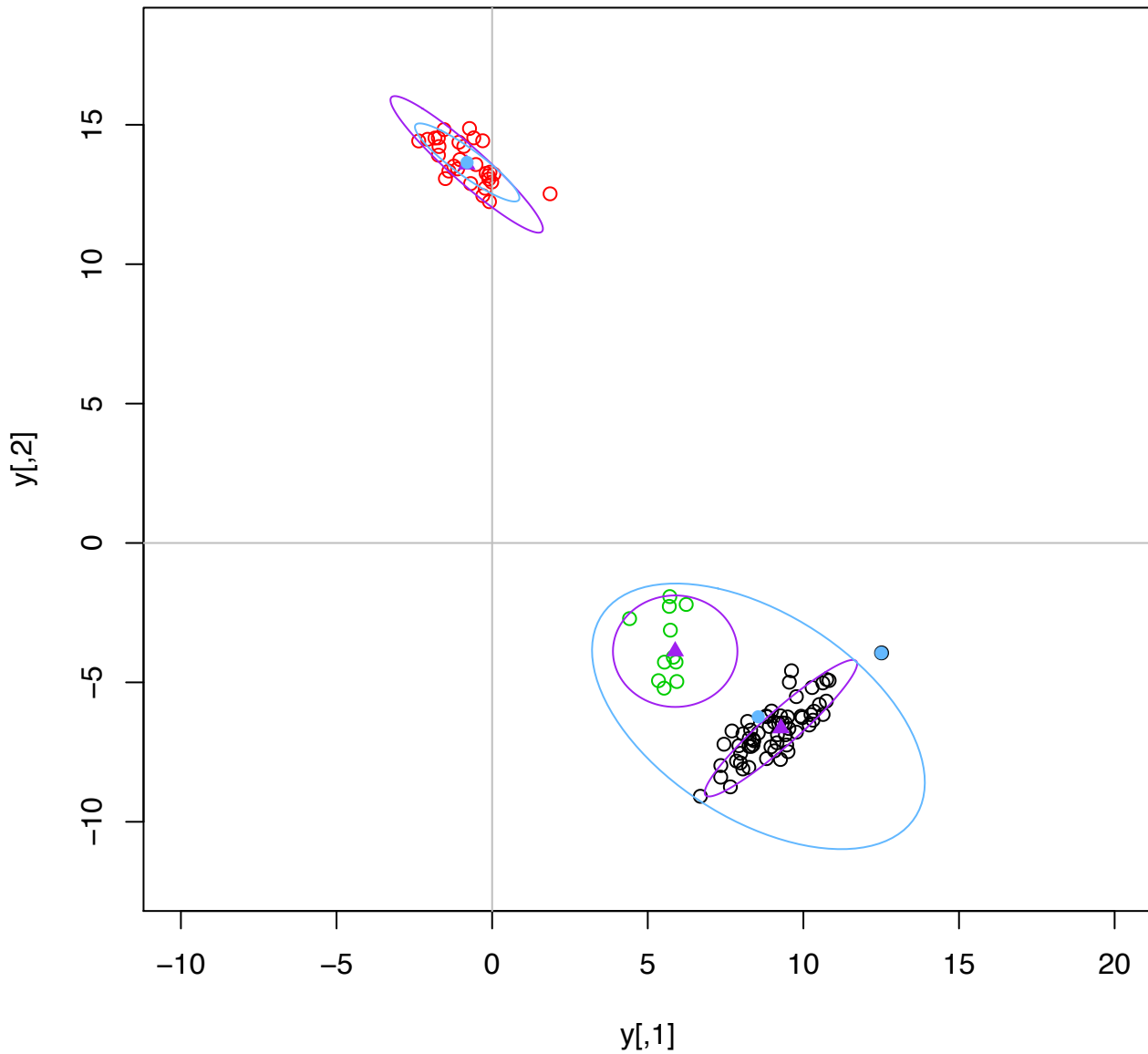**iteration #13:   Q = −200.655854739478**

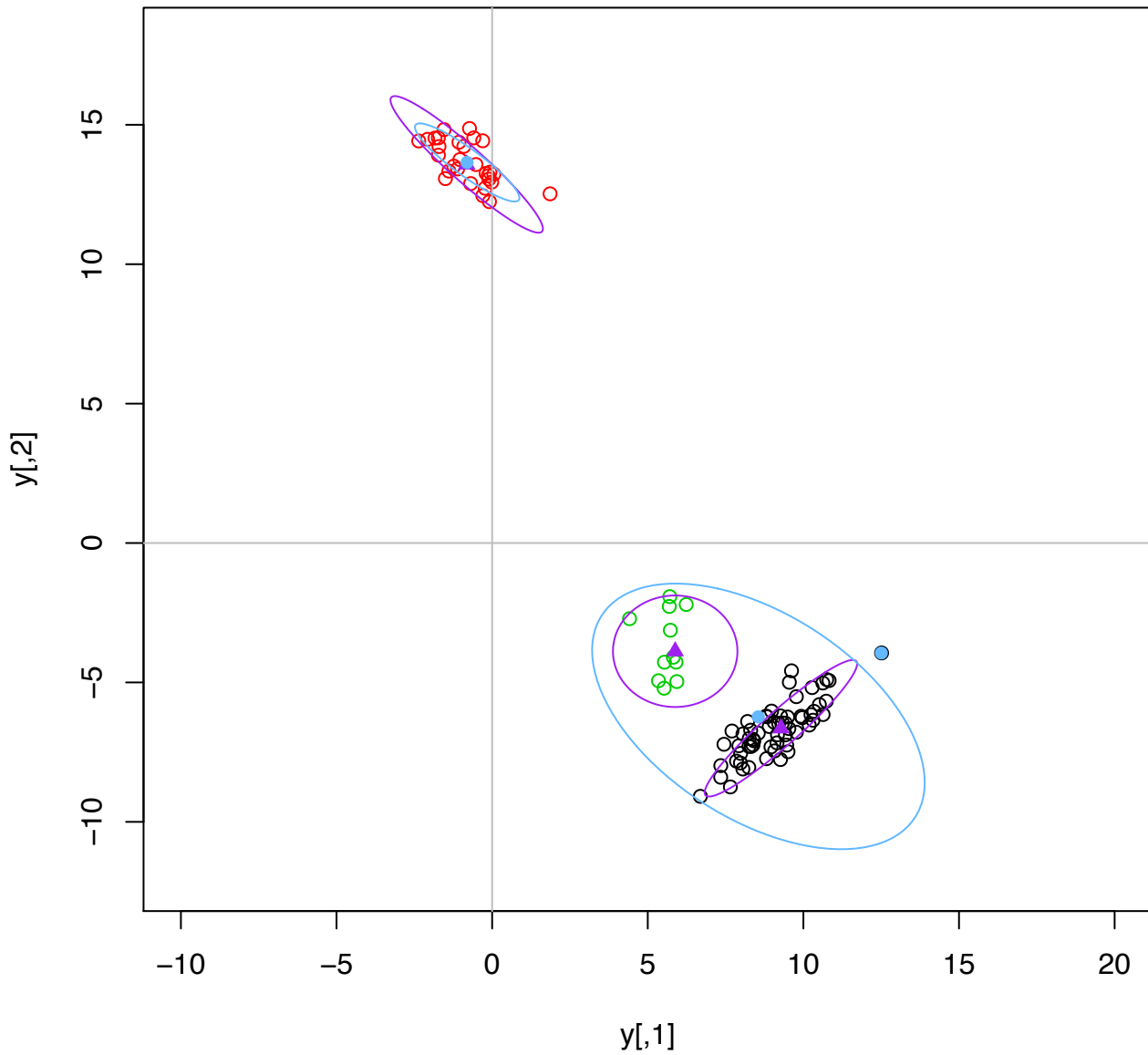**iteration #14:   Q = −200.655855366295**

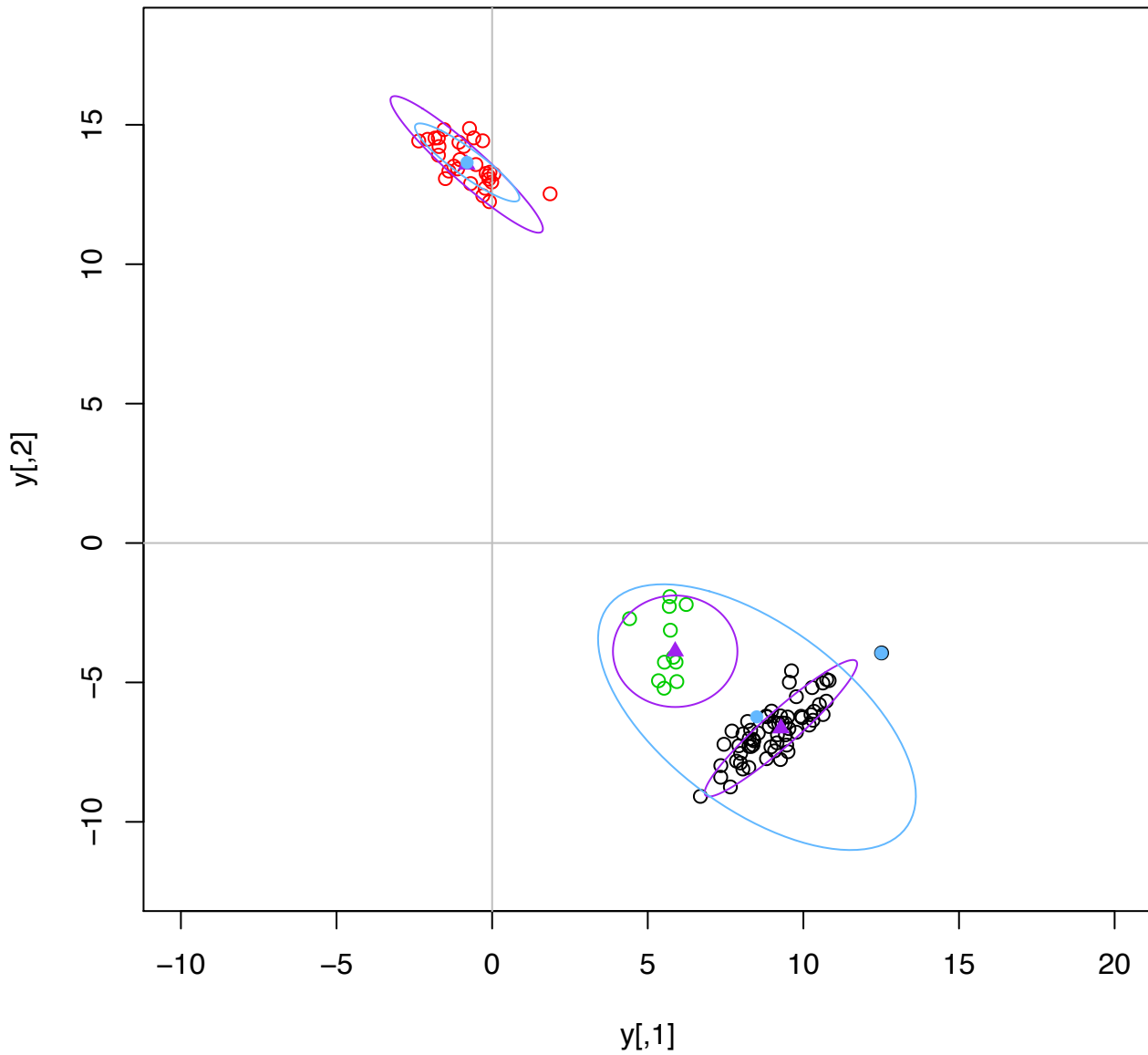**iteration #15:   Q = −200.656012760752**

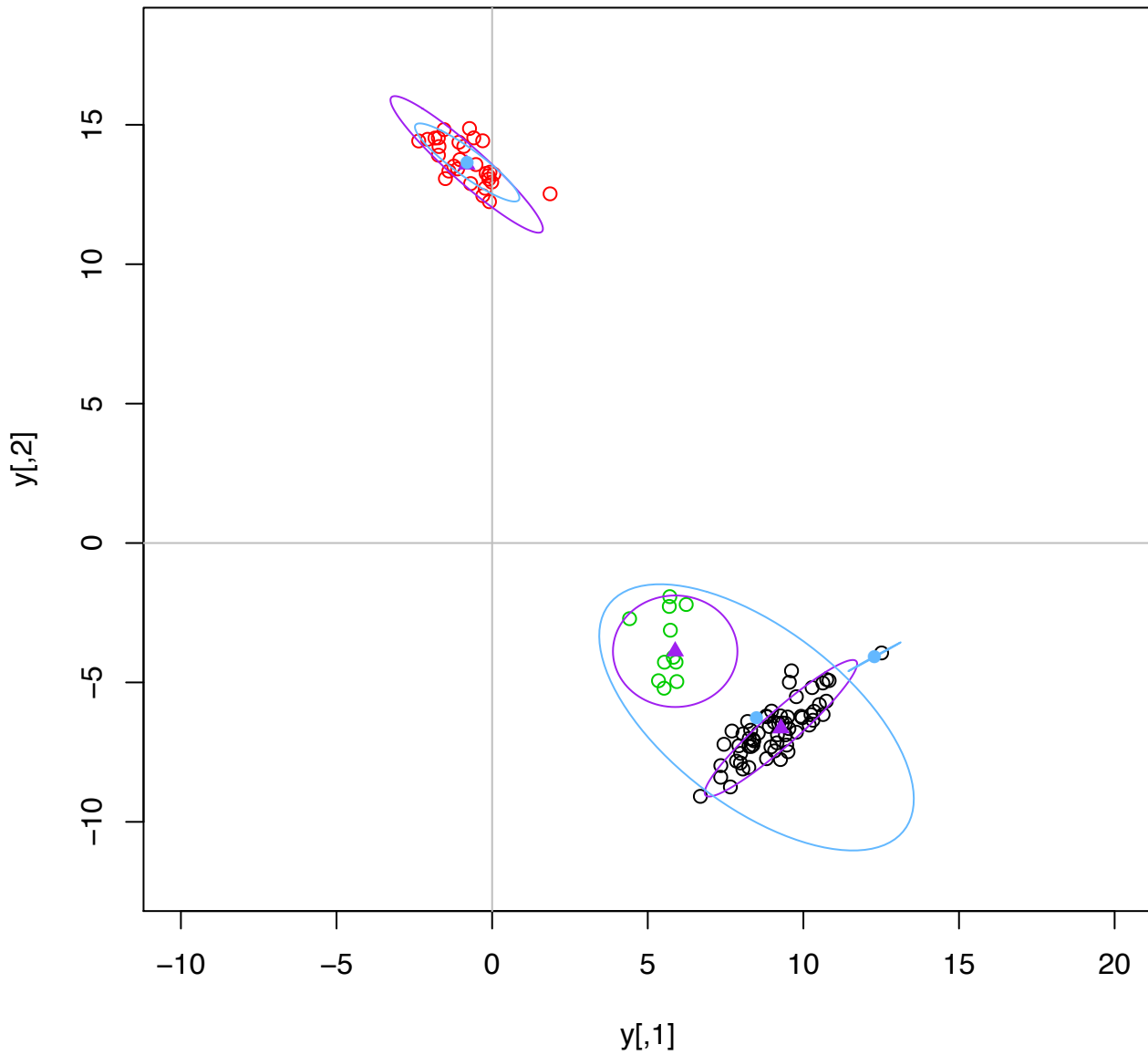**iteration #16:   Q = −200.664532463787**

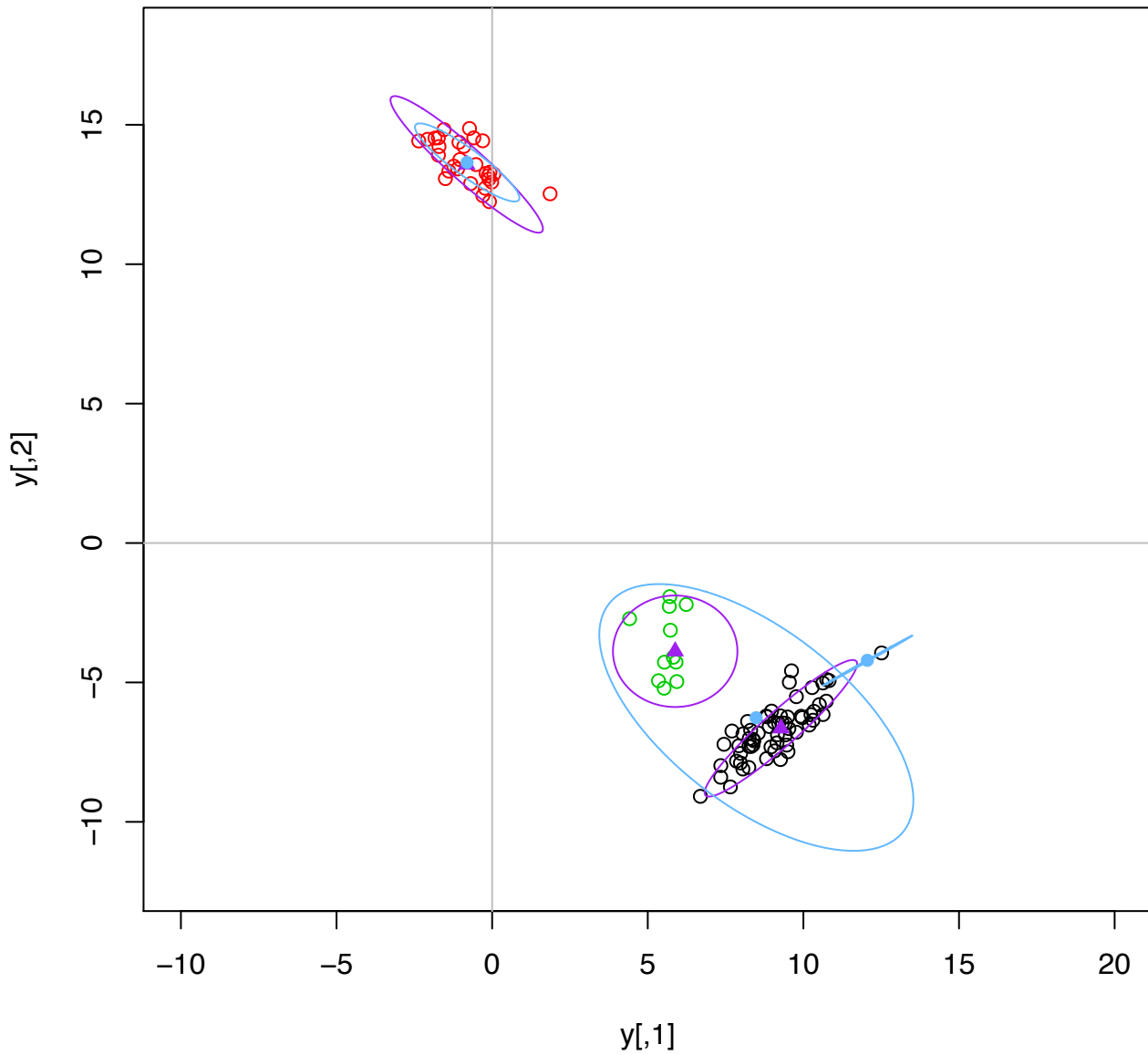**iteration #17:   Q = −200.352156018079**

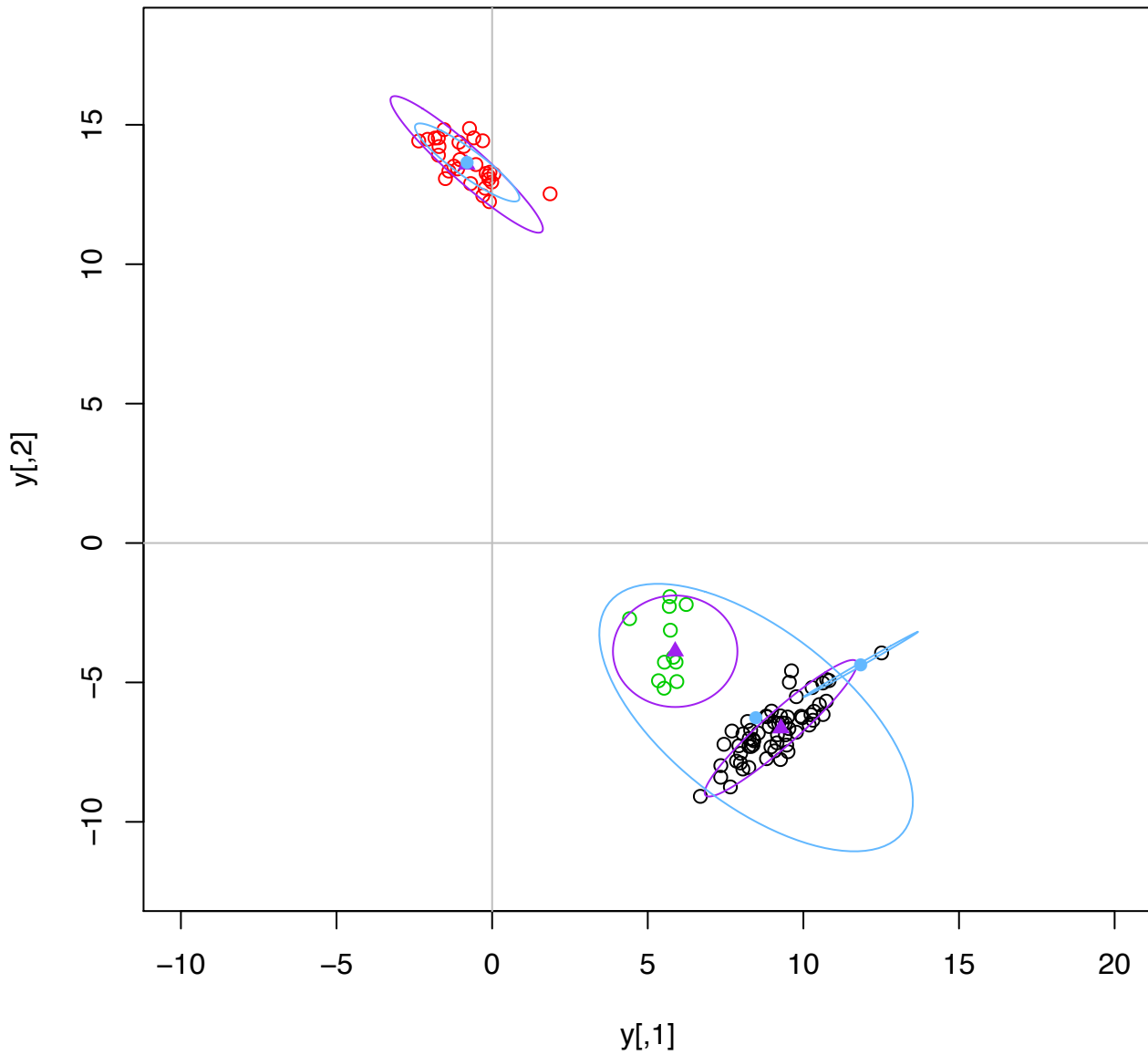**iteration #18:   Q = −265.117151614272**

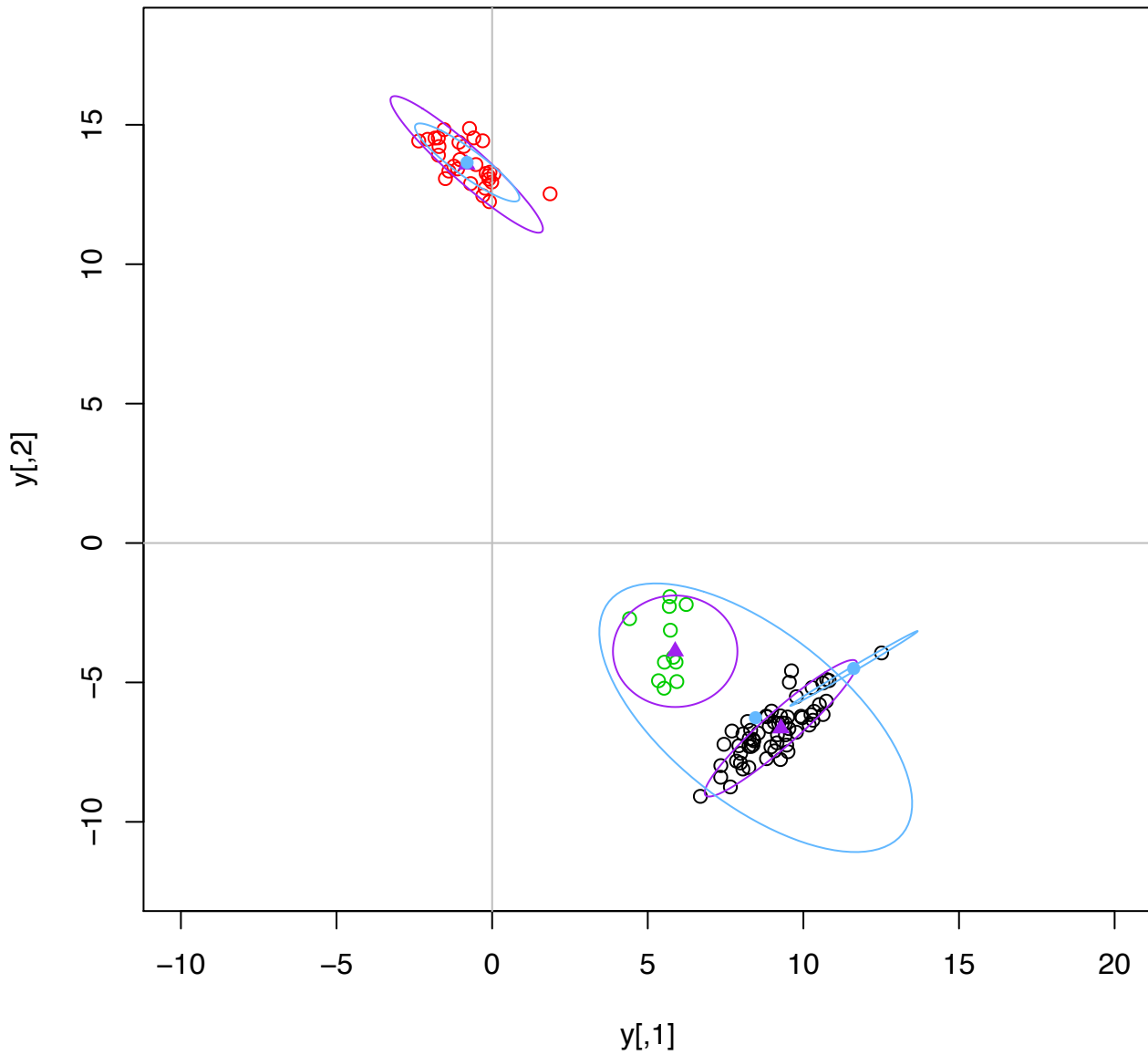**iteration #19:   Q = −198.449662570773**

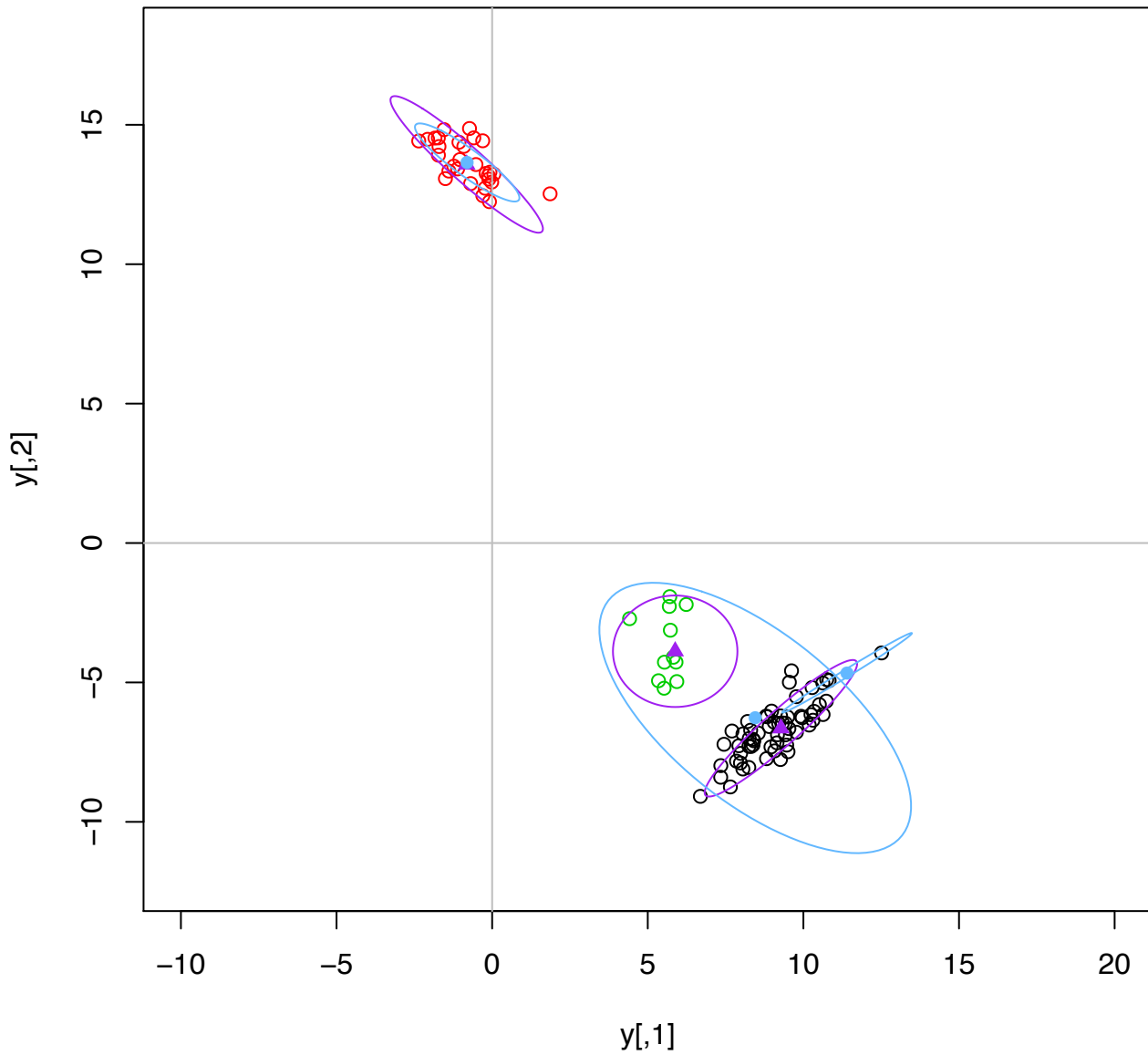**iteration #20:   Q = −198.795208723426**

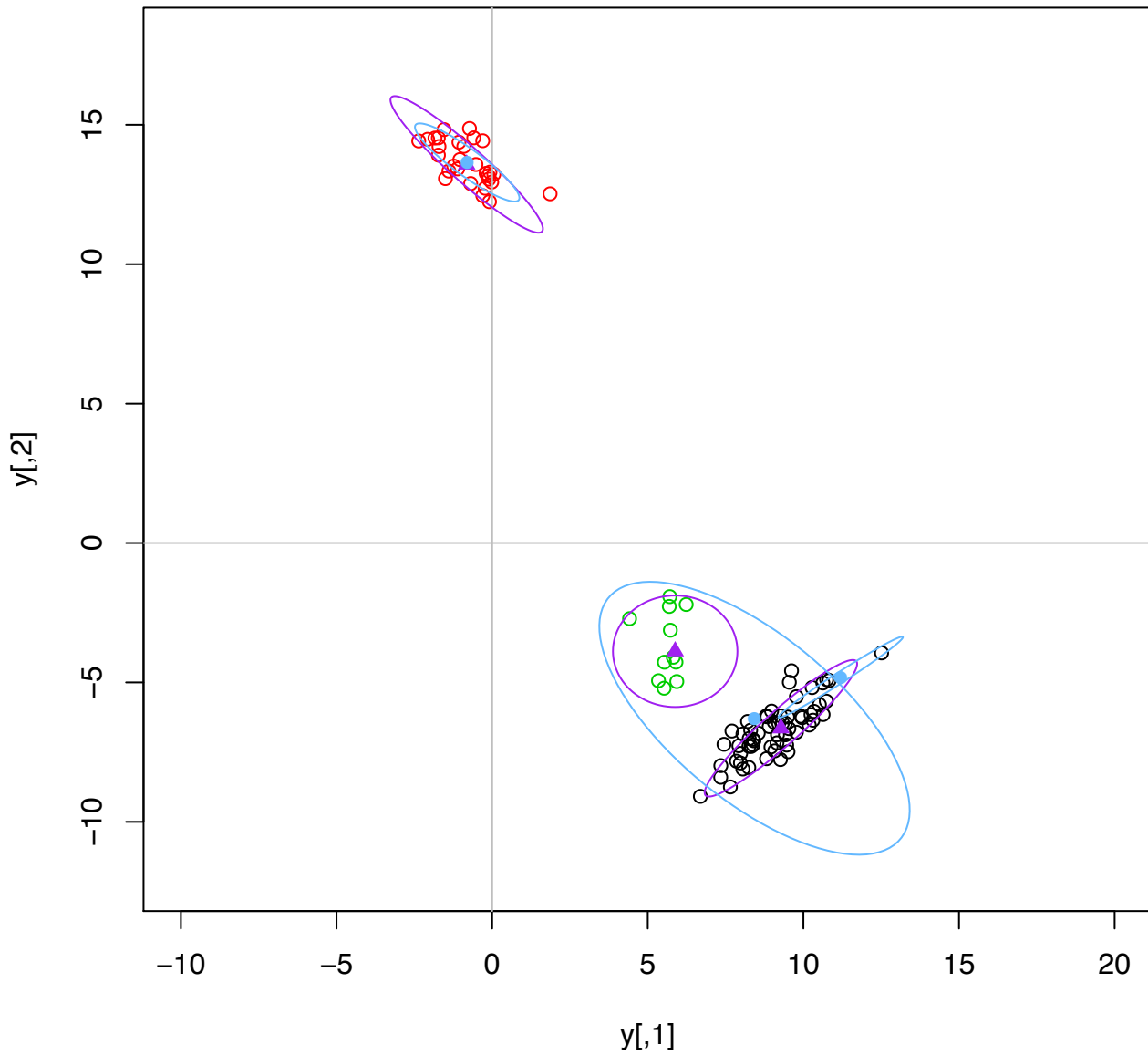**iteration #21:   Q = −199.415326326685**

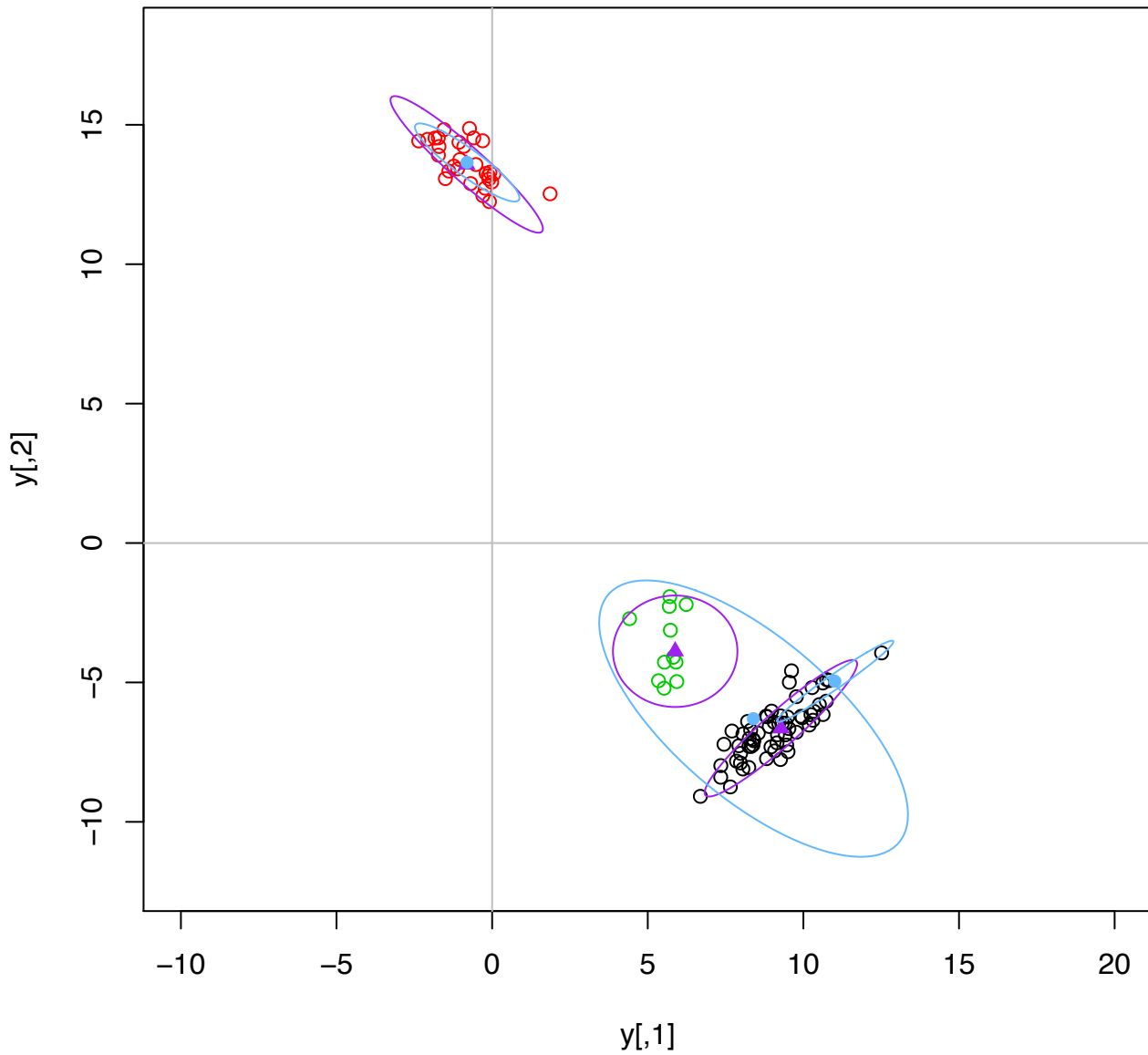**iteration #22:   Q = −200.187920815352**

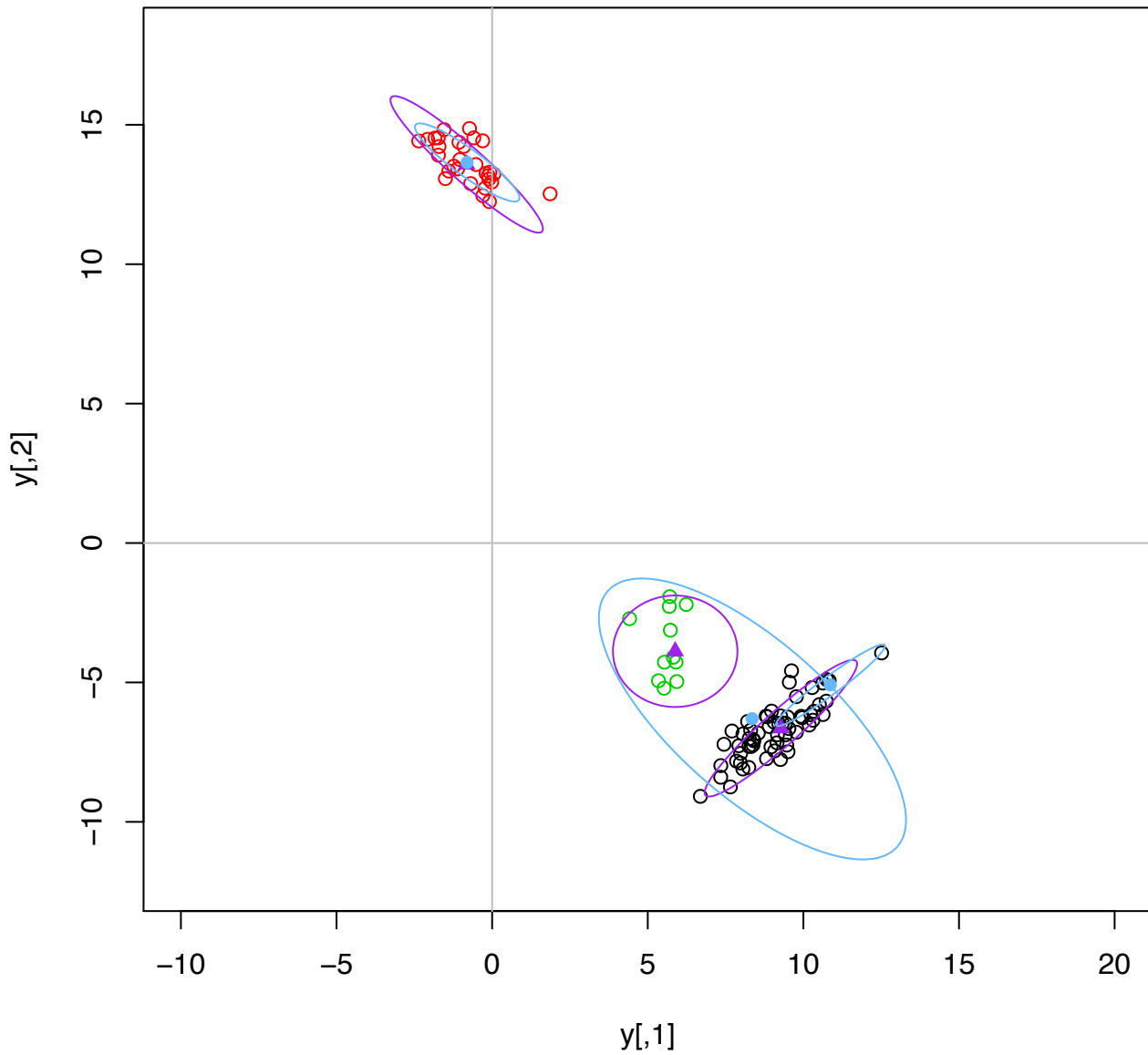**iteration #23:   Q = −201.074248722098**

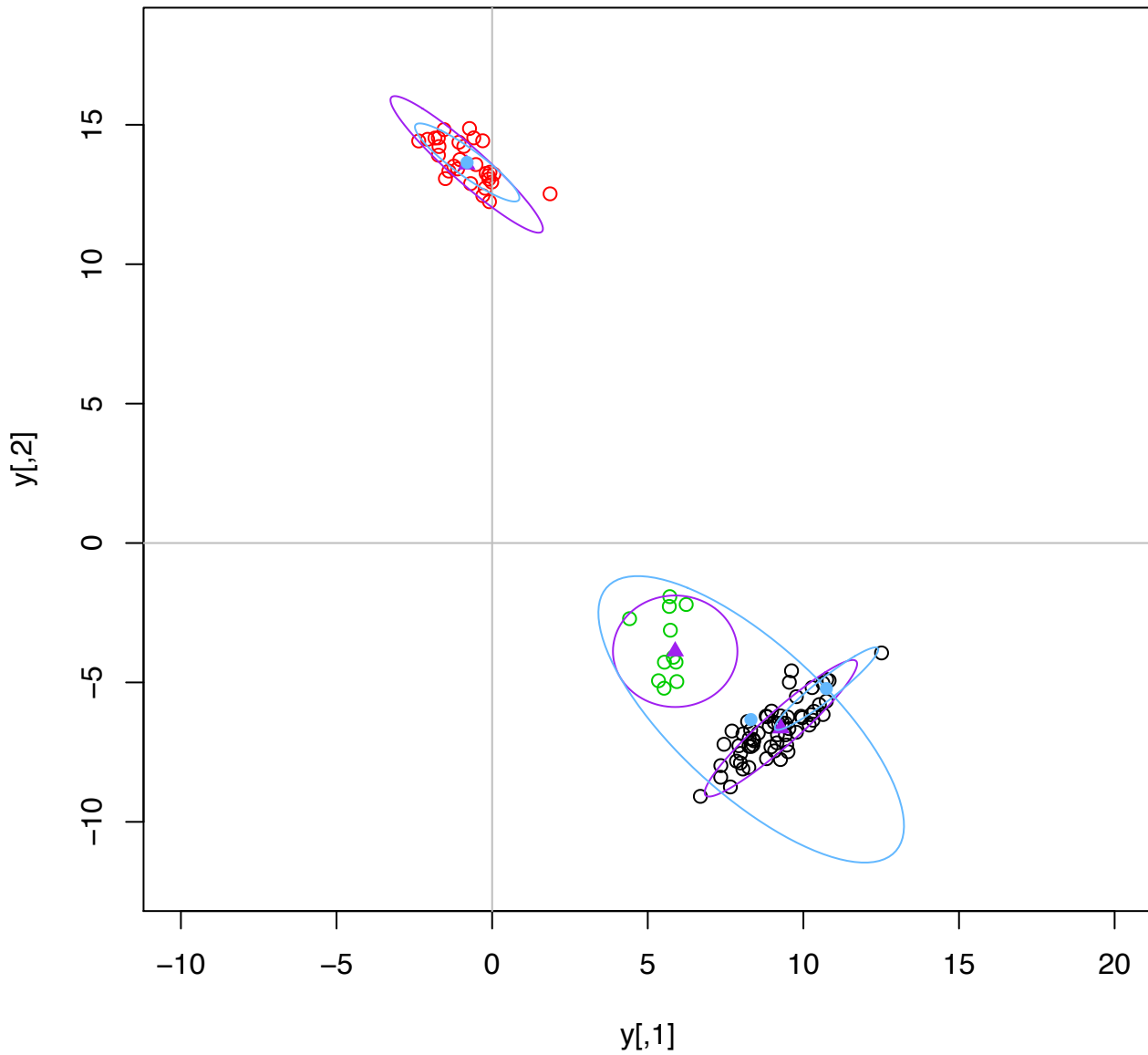**iteration #24: Q = −201.98970767207**

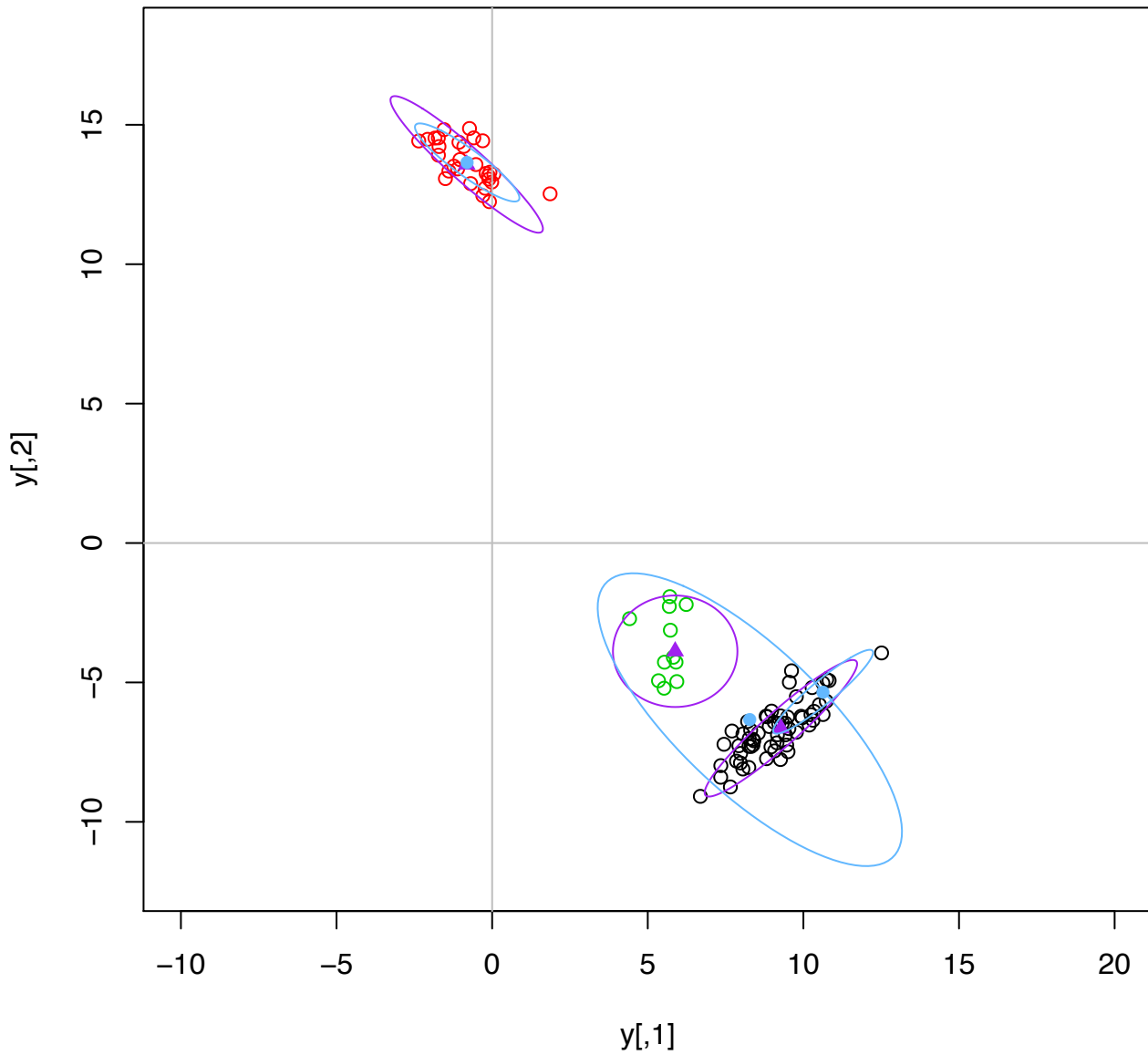**iteration #25: Q = −202.837211563994**

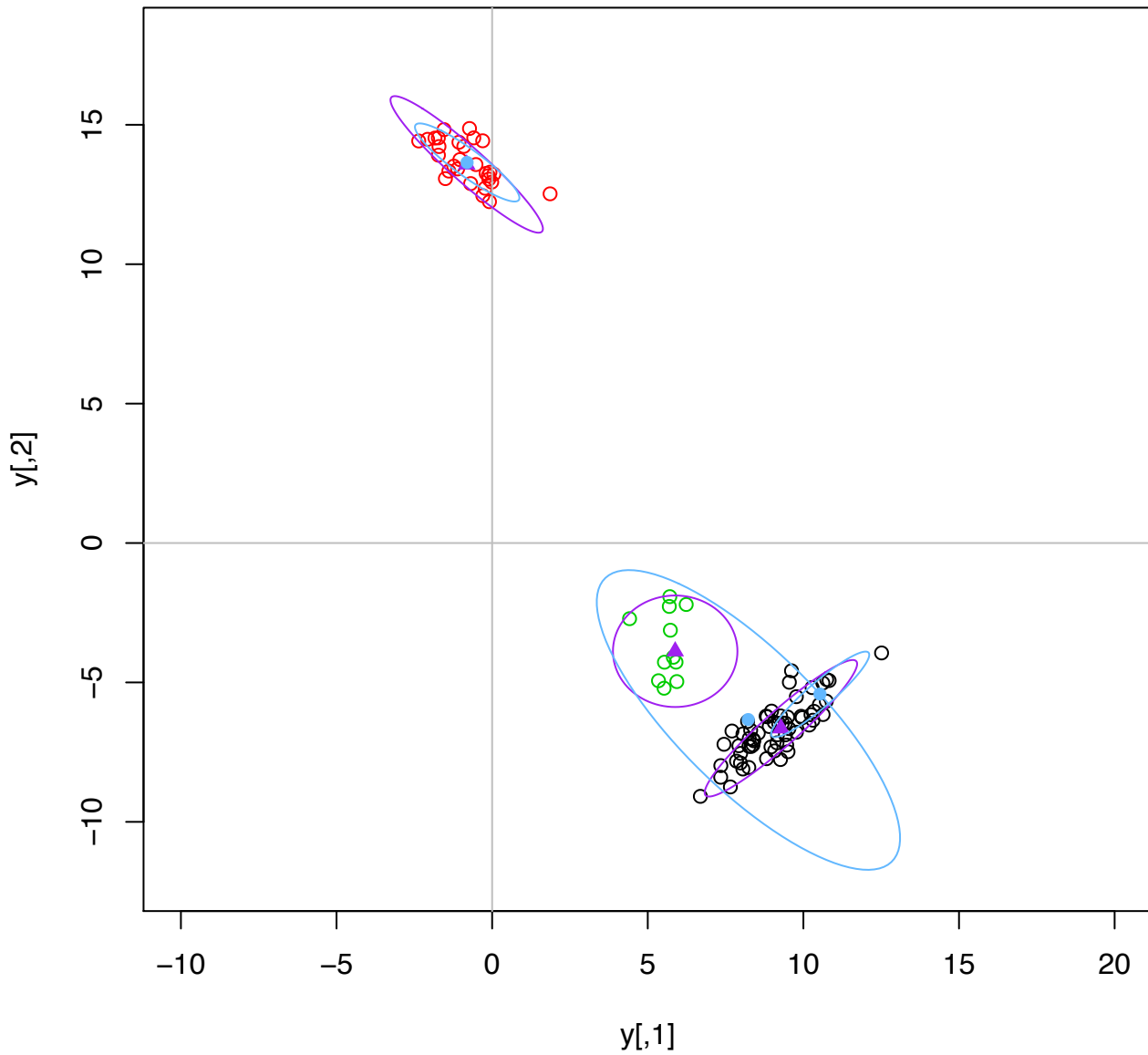**iteration #26:   Q = −203.541271760496**

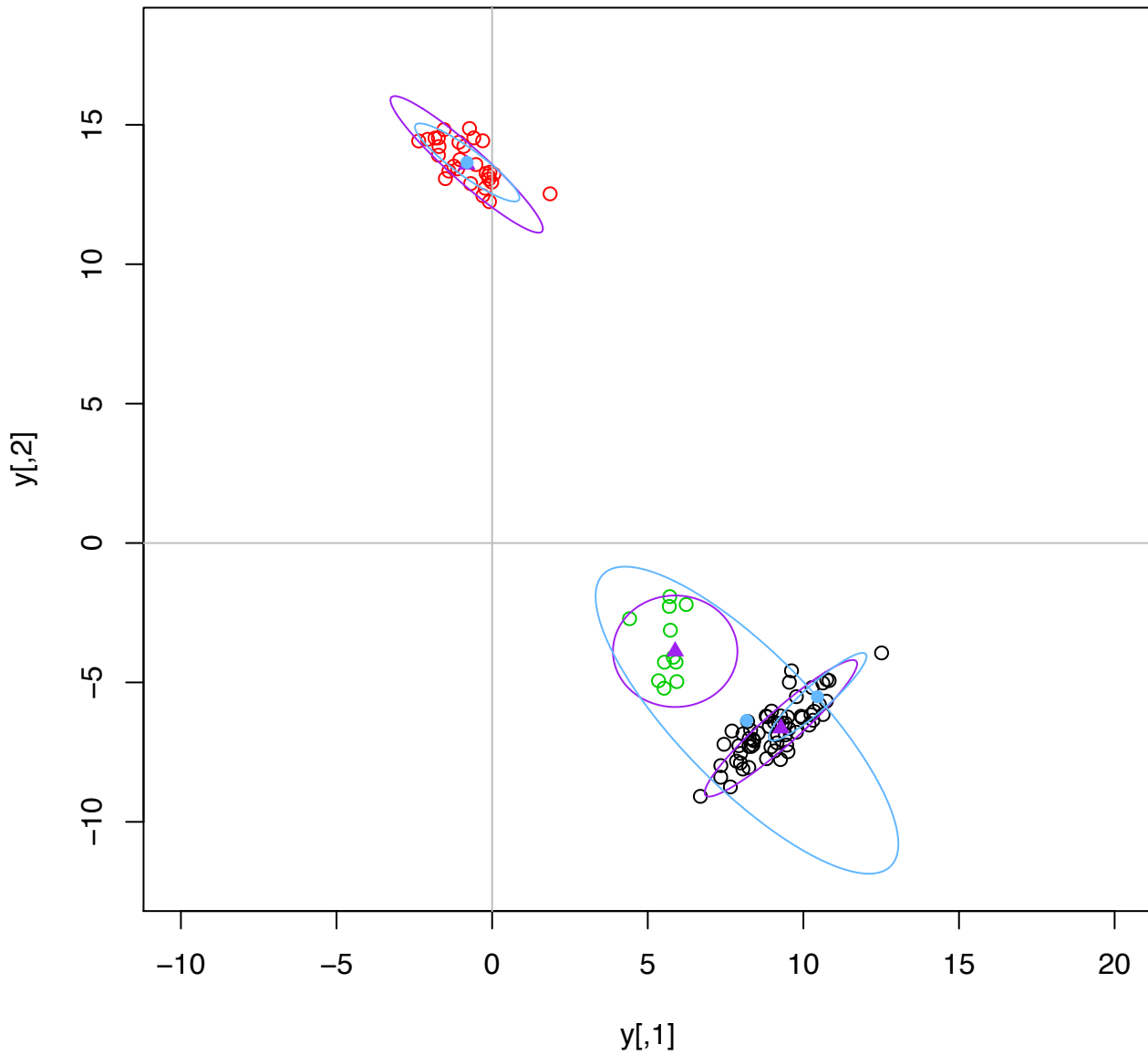**iteration #27:   Q = −204.059828241975**

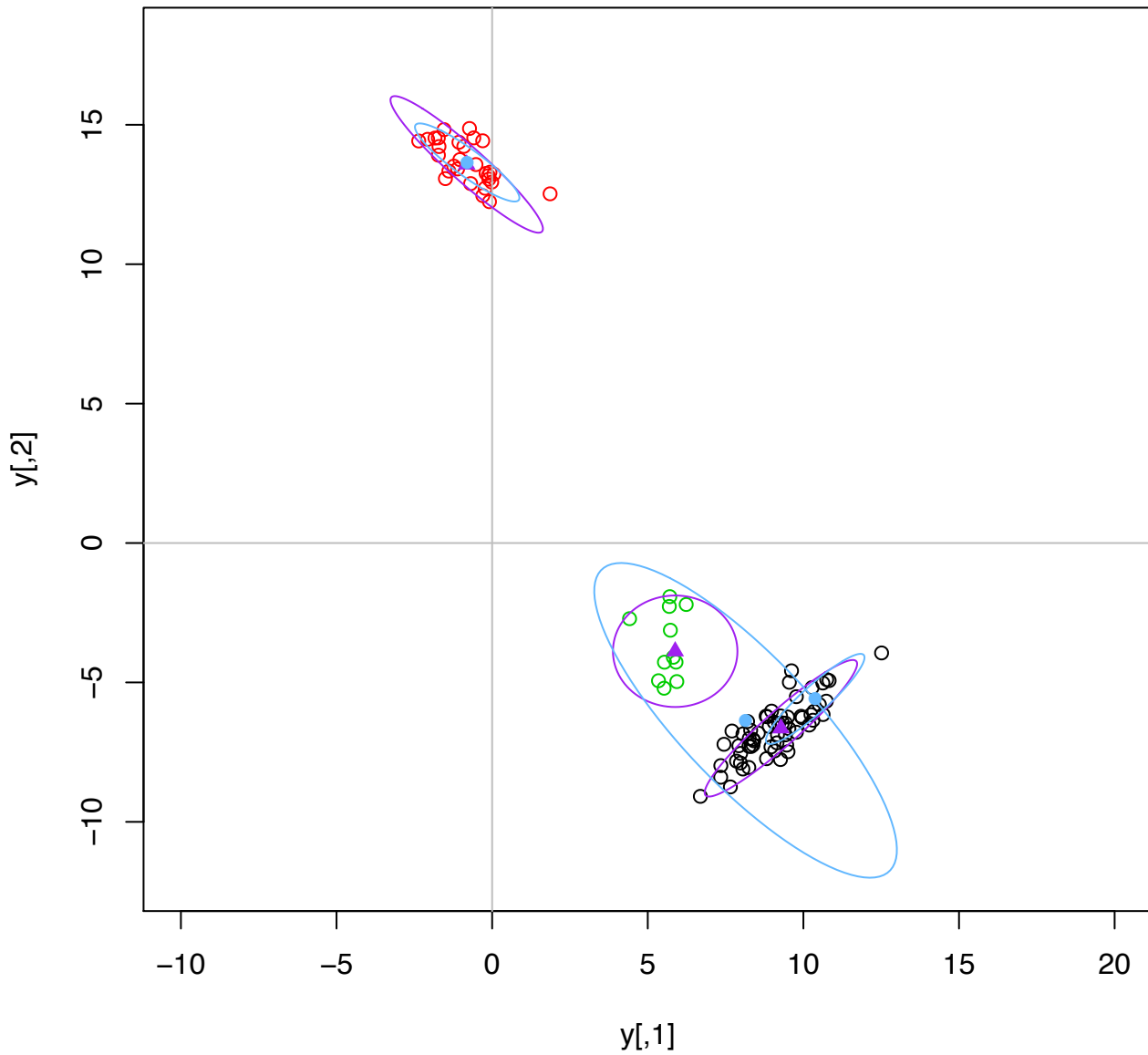**iteration #28:   Q = −204.390120512378**

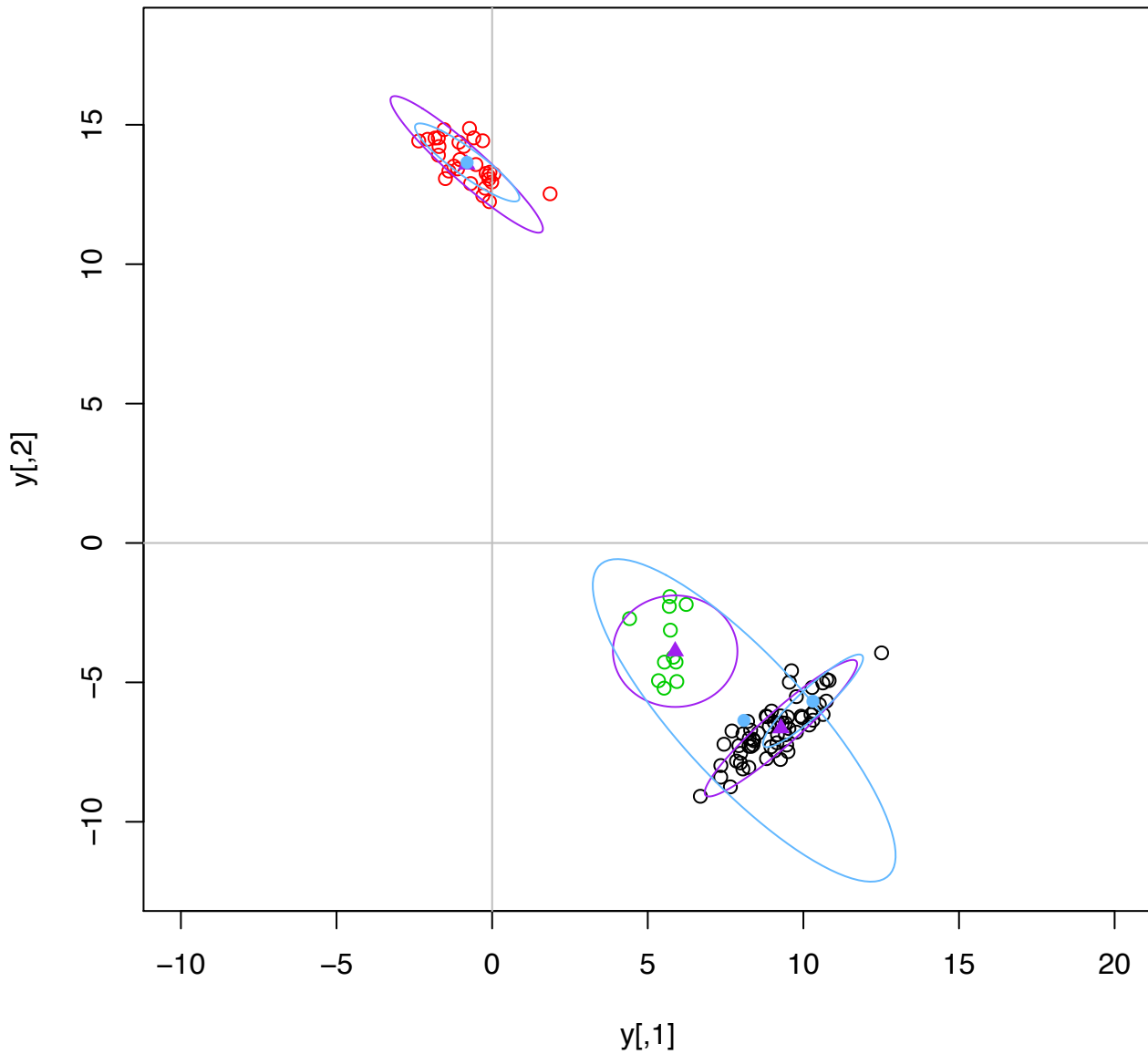**iteration #29:   Q = −204.560285944458**

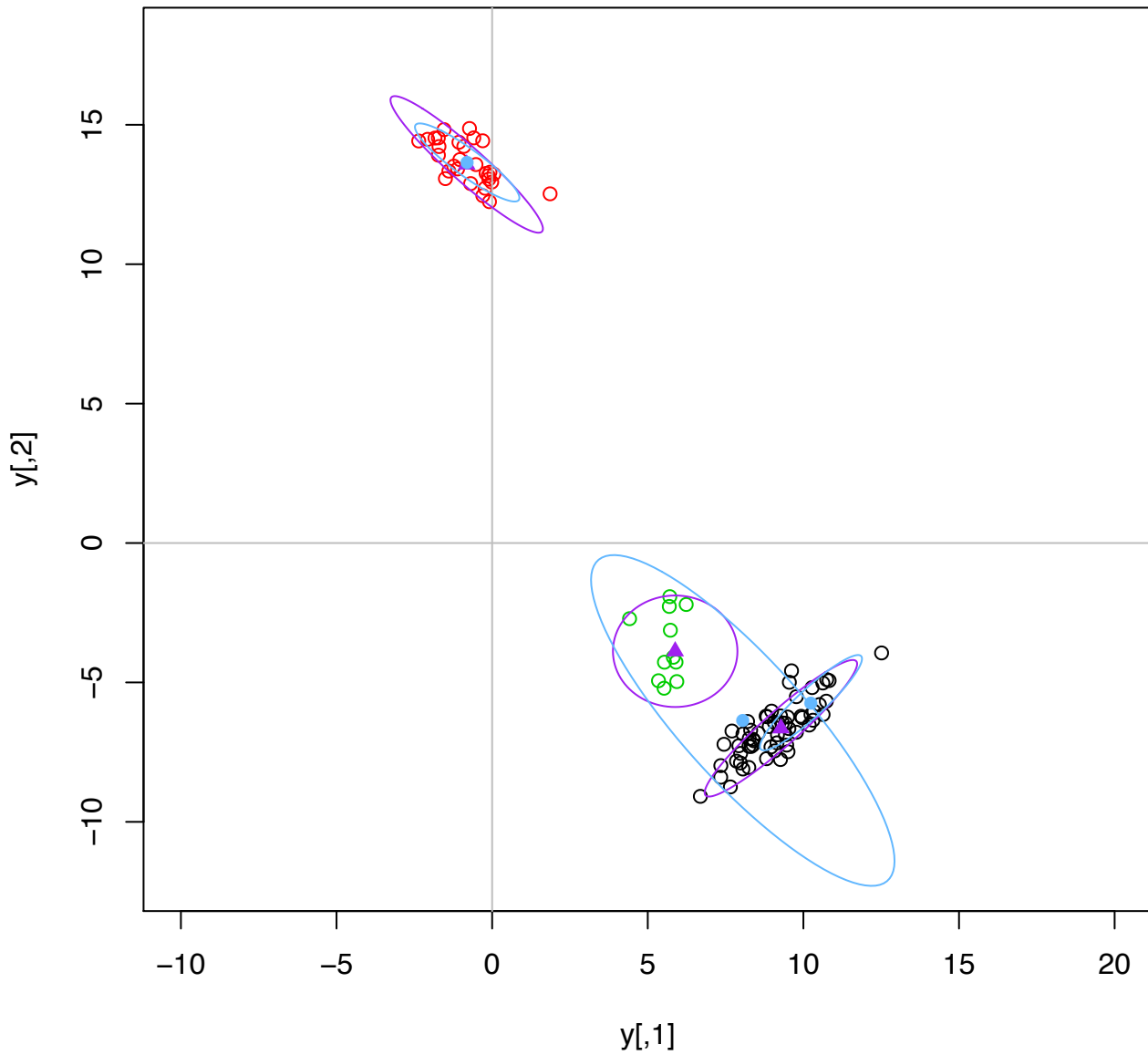**iteration #30:   Q = −204.609629704081**

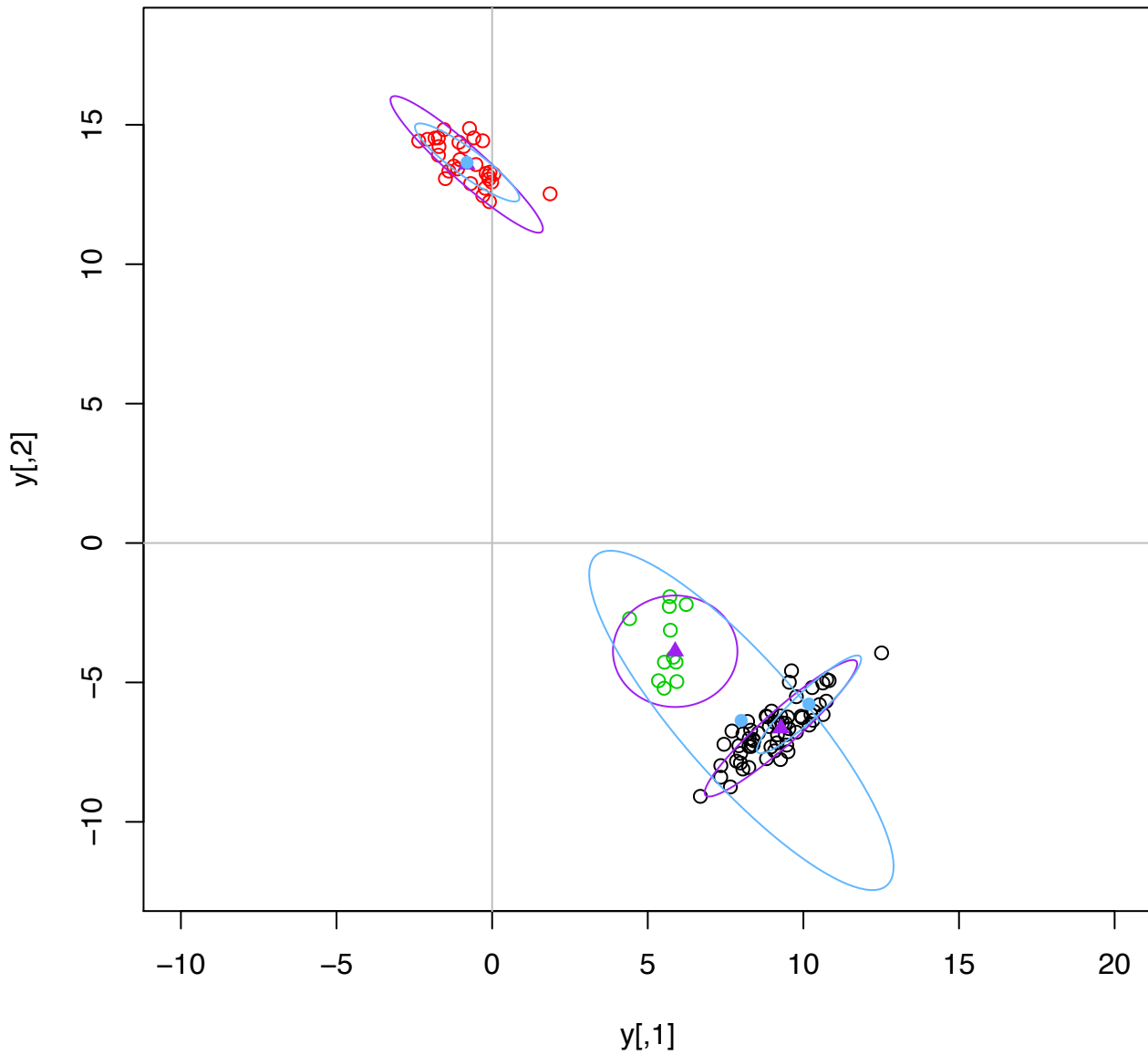**iteration #31:   Q = −204.570116157682**

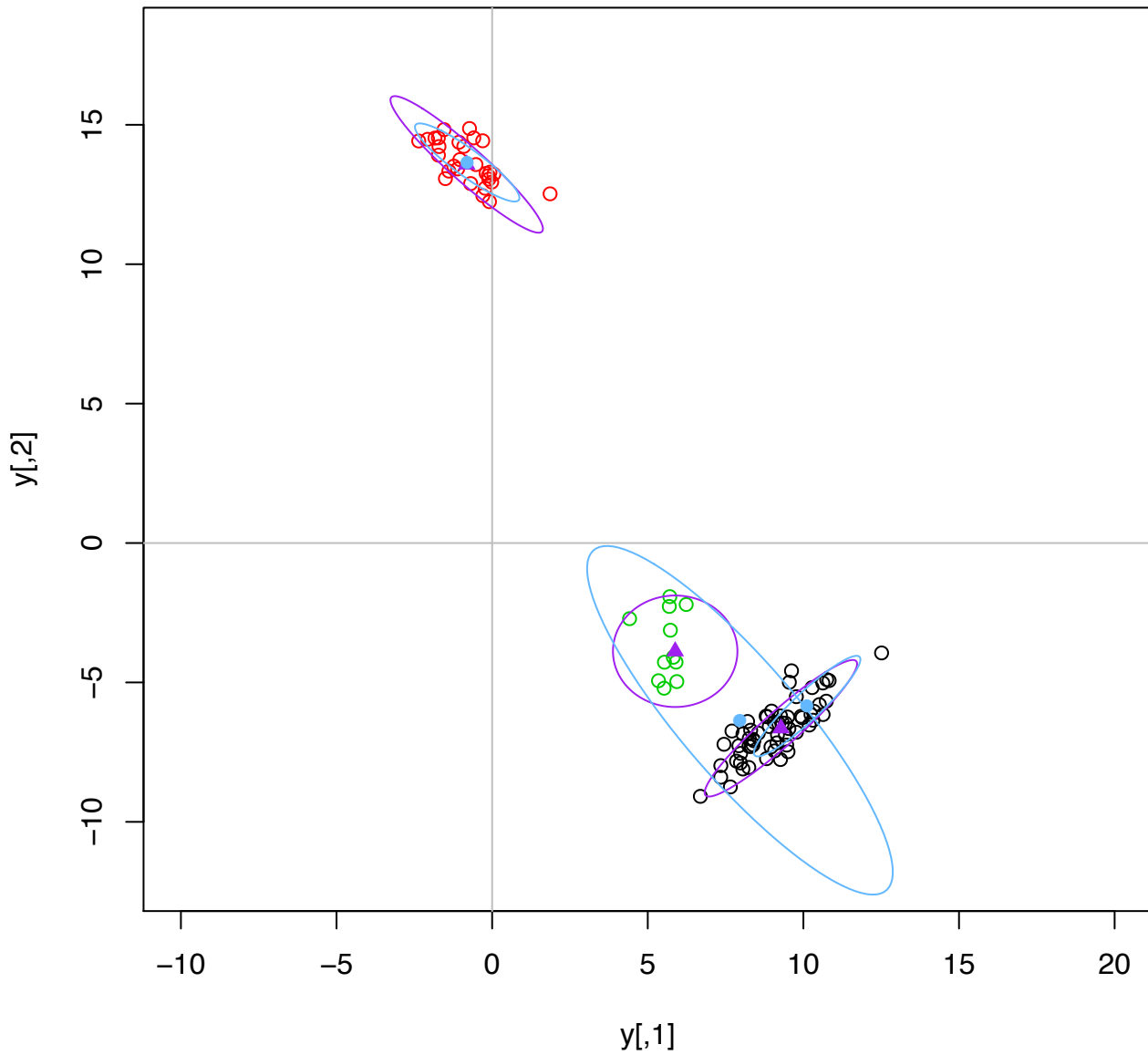**iteration #32: Q = −204.456688411068**

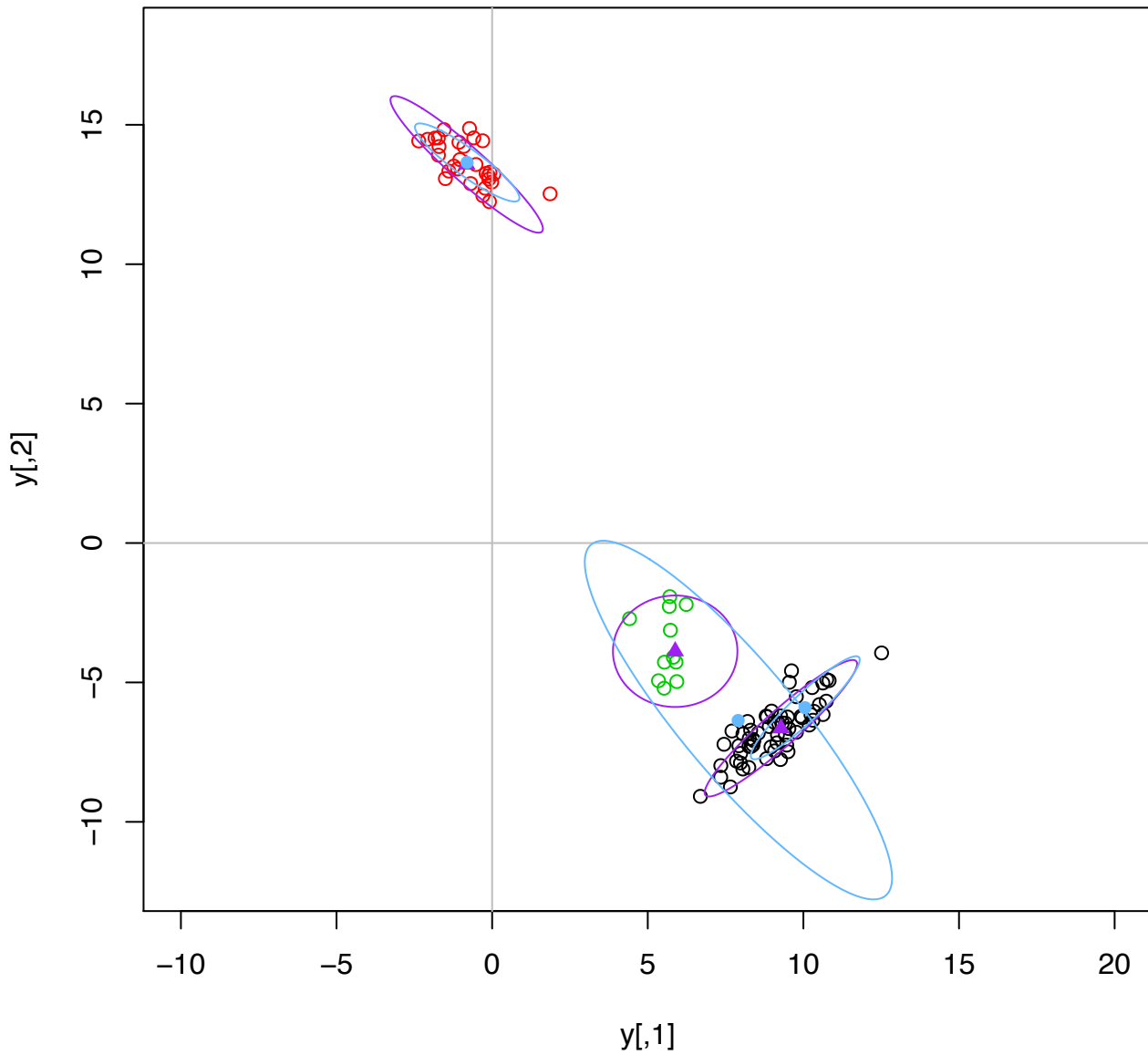**iteration #33:   Q = −204.265824976627**

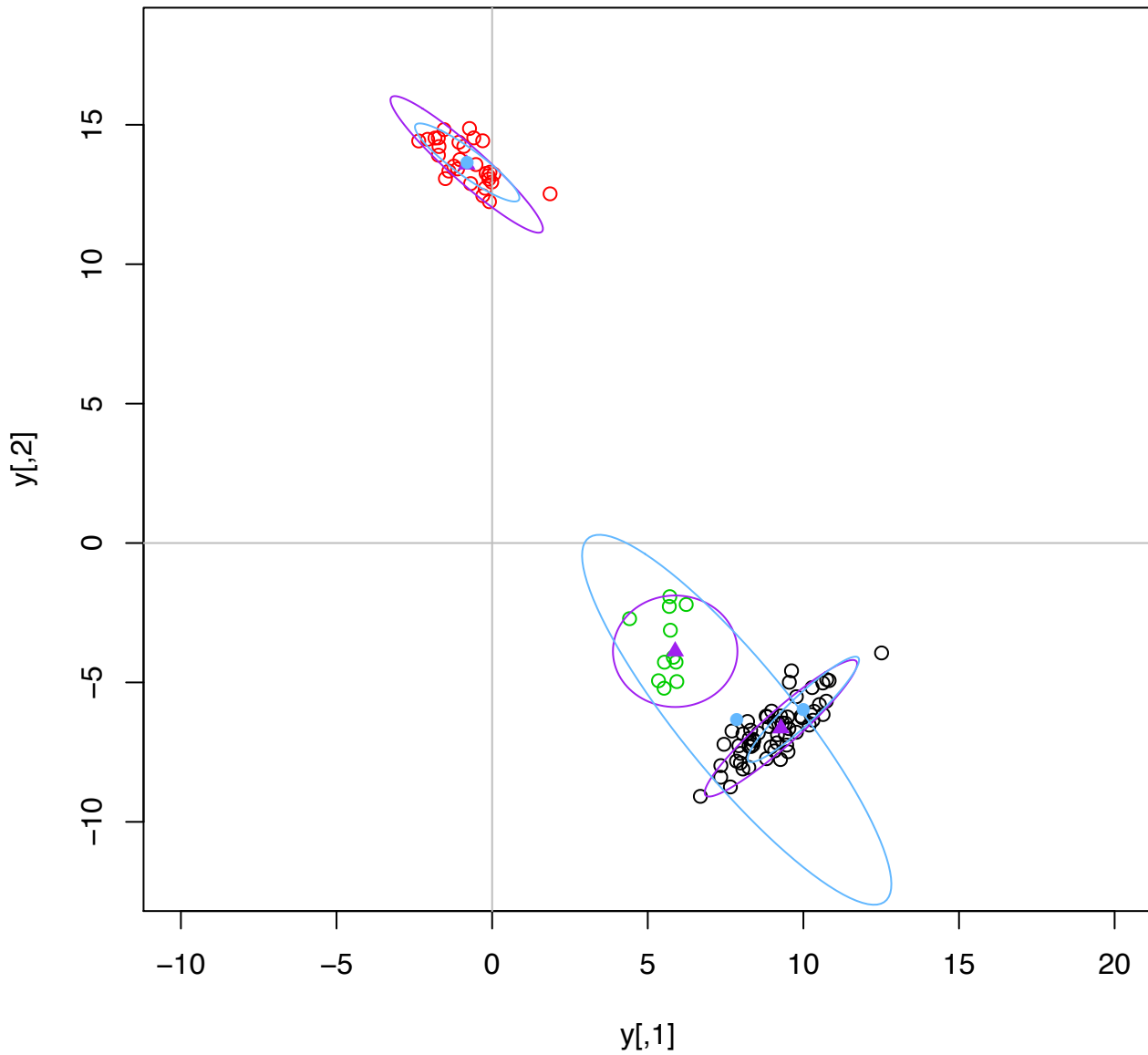**iteration #34:   Q = −203.977617986917**
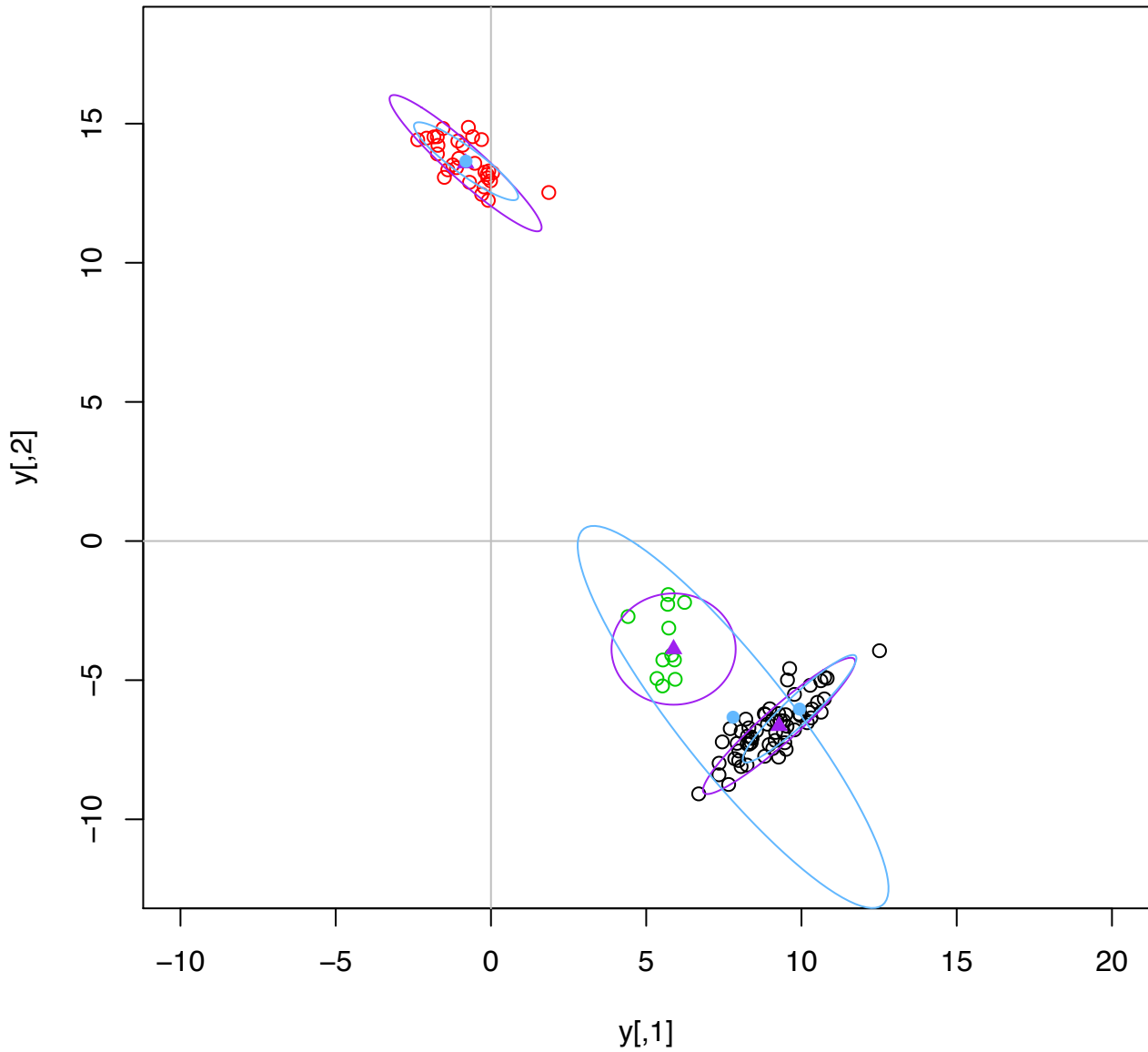
iteration #35:   Q = −203.557314285168
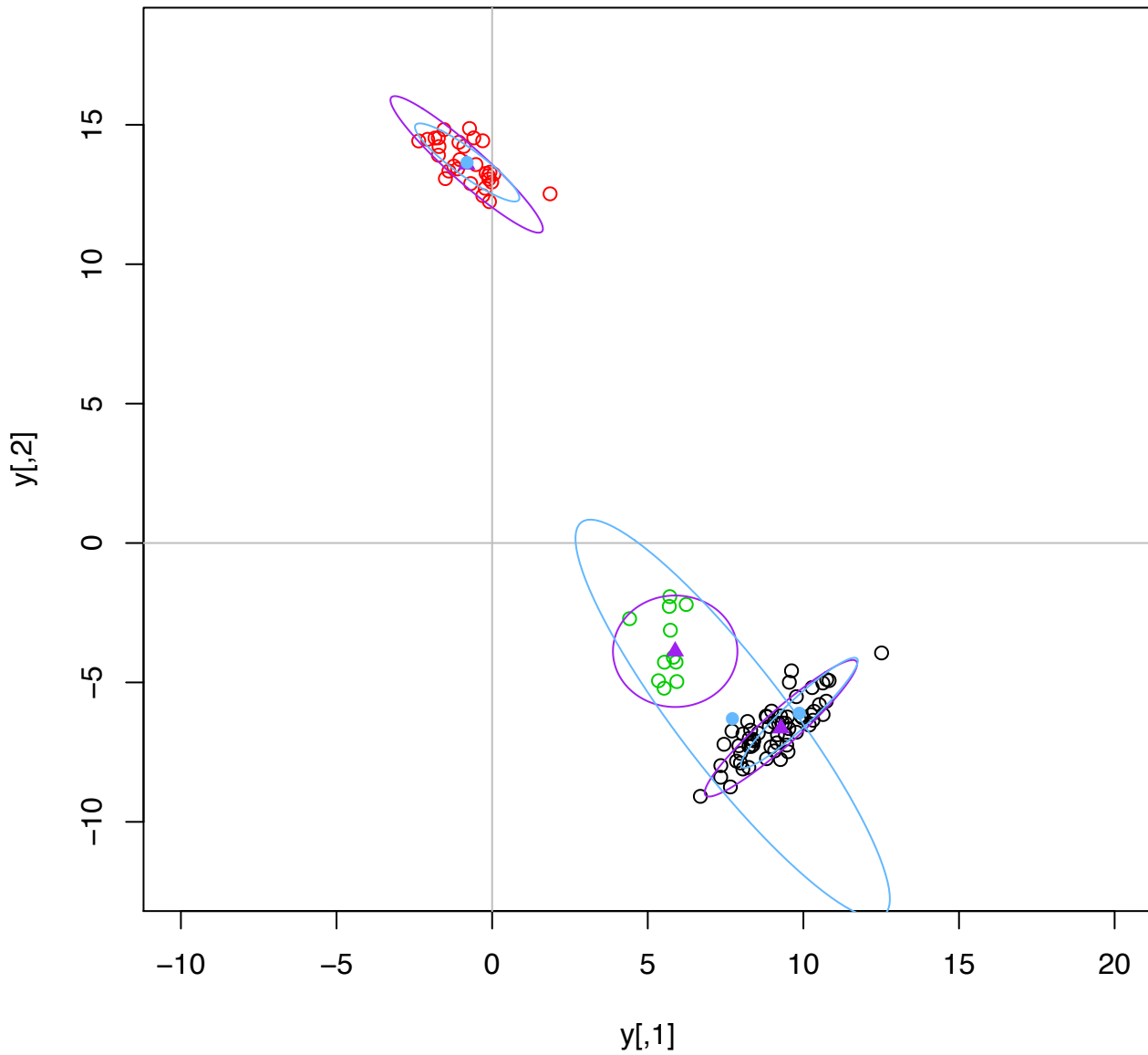
iteration #36:   Q = −202.954588888024
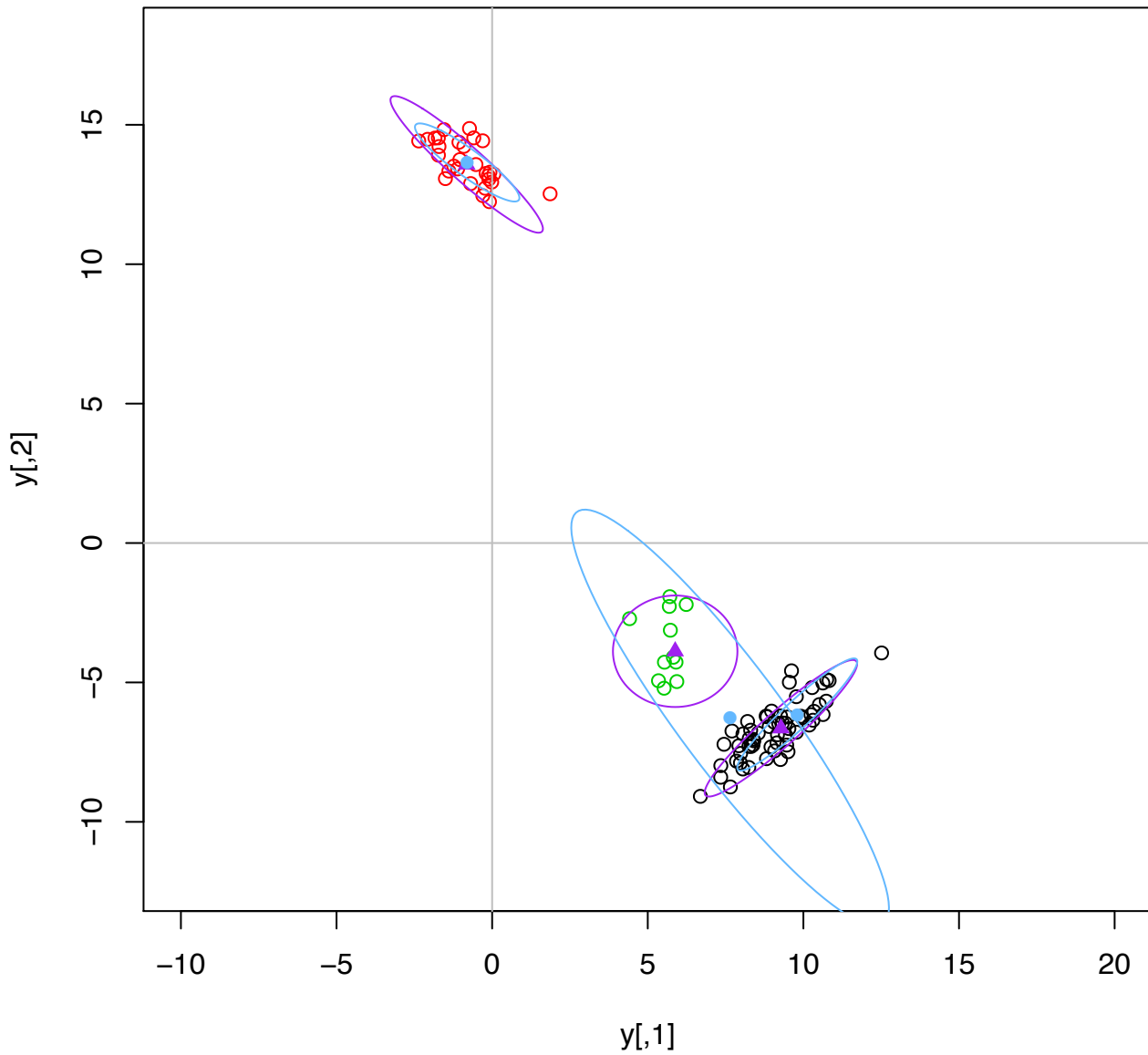
iteration #37:   Q = −202.100465505002

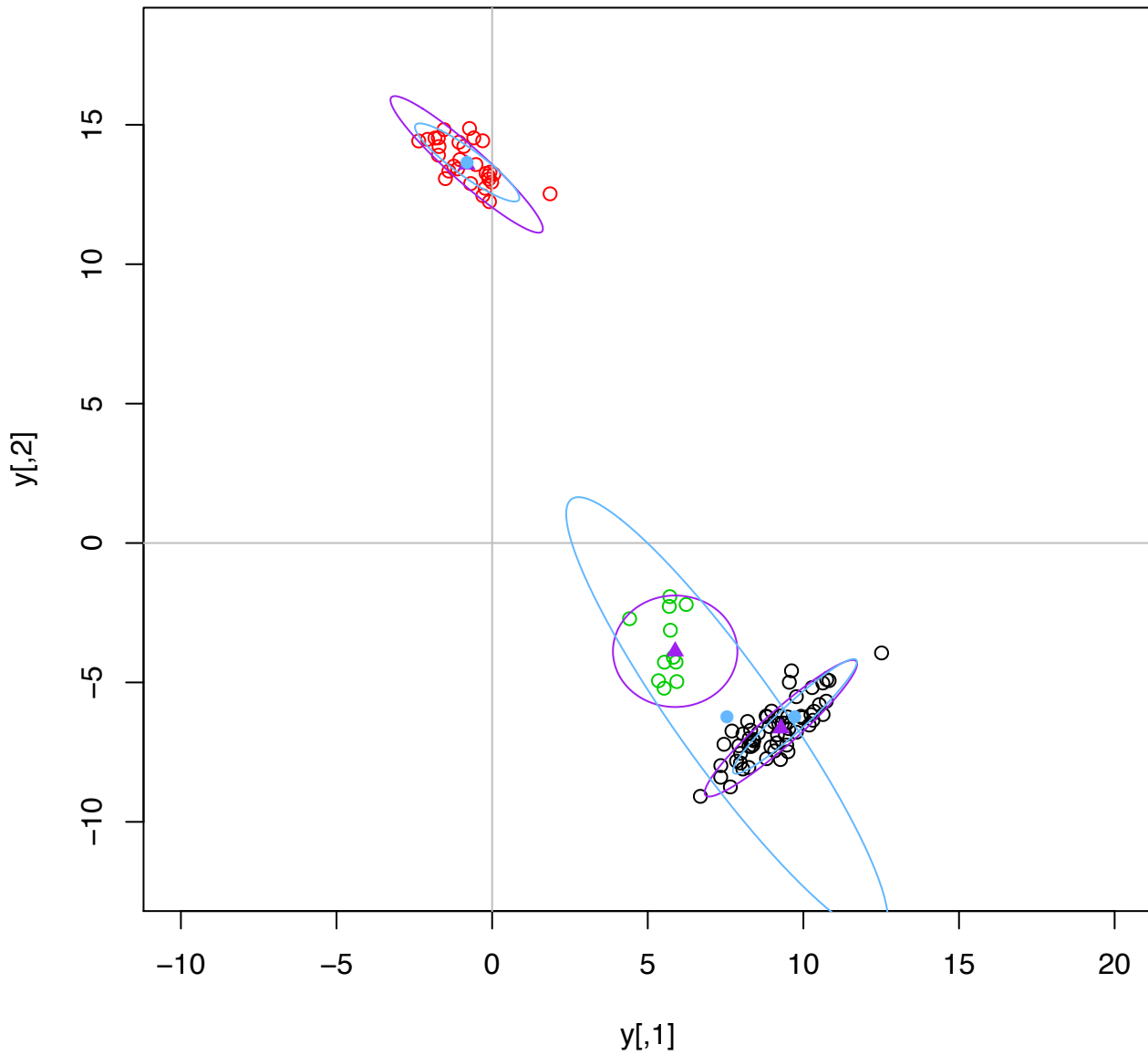**iteration #38:   Q = −200.902320921215**

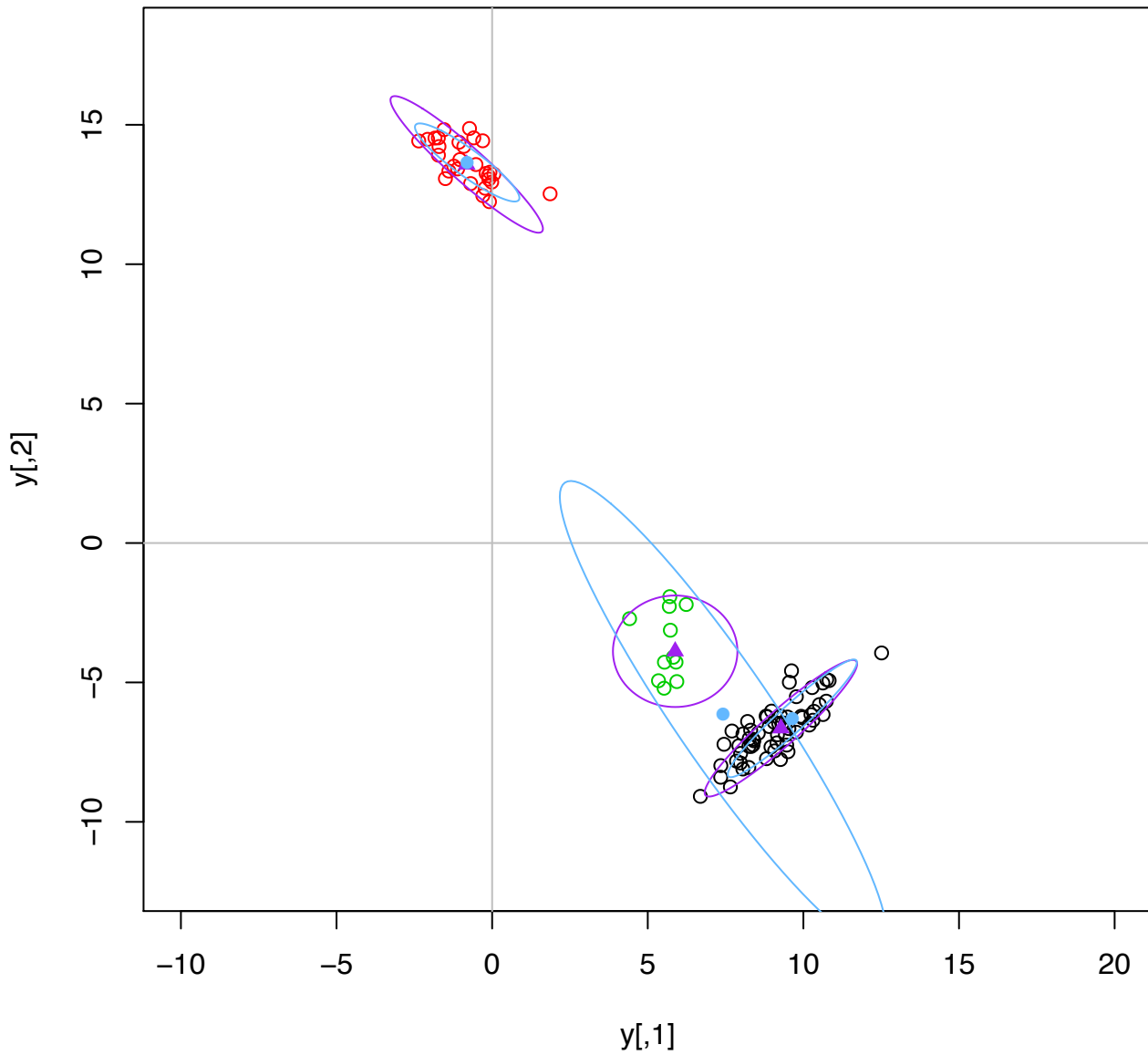**iteration #39:   Q = −199.236765866866**

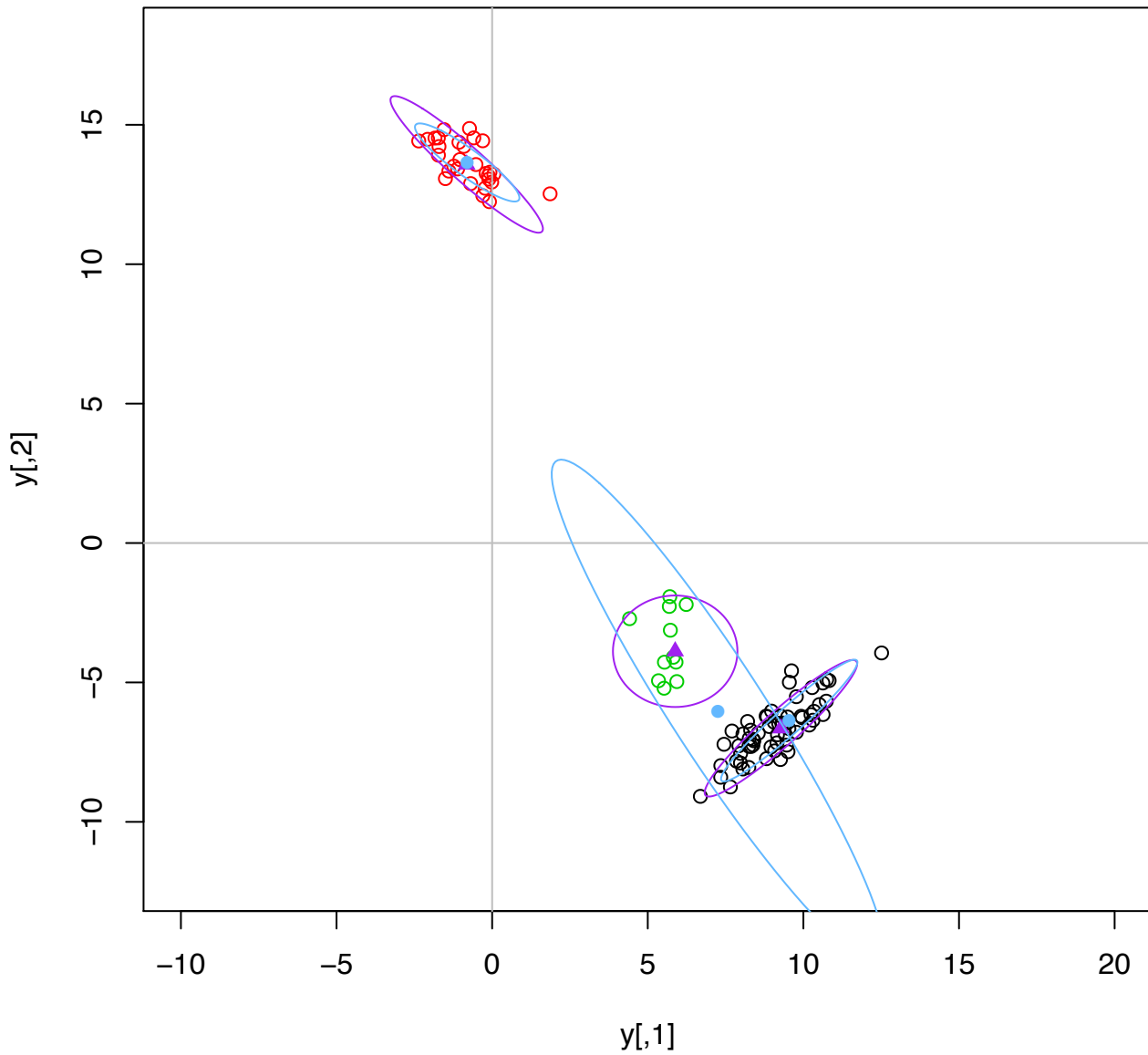**iteration #40: Q = −196.936740575427**

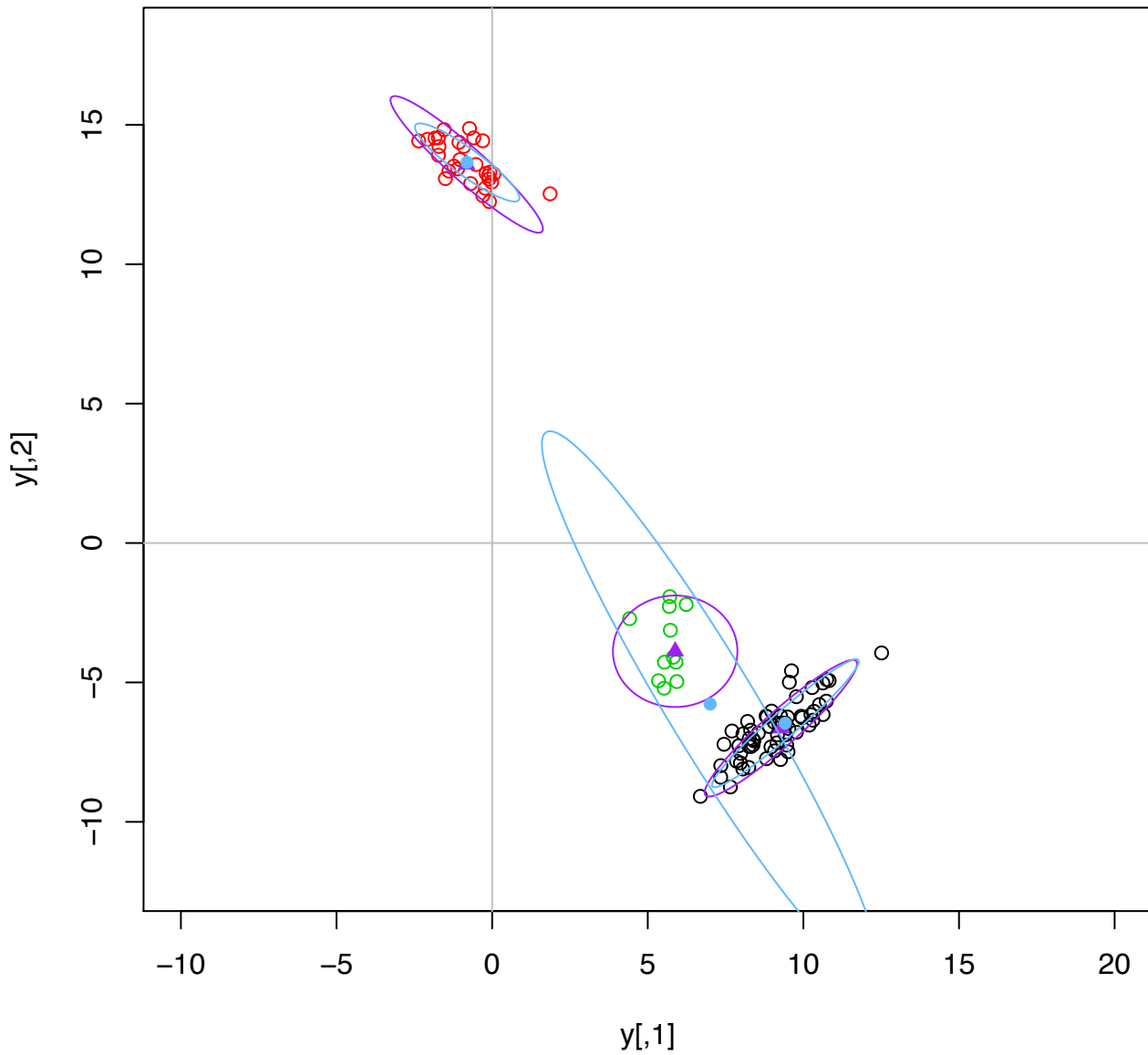**iteration #41:   Q = −193.756861439087**

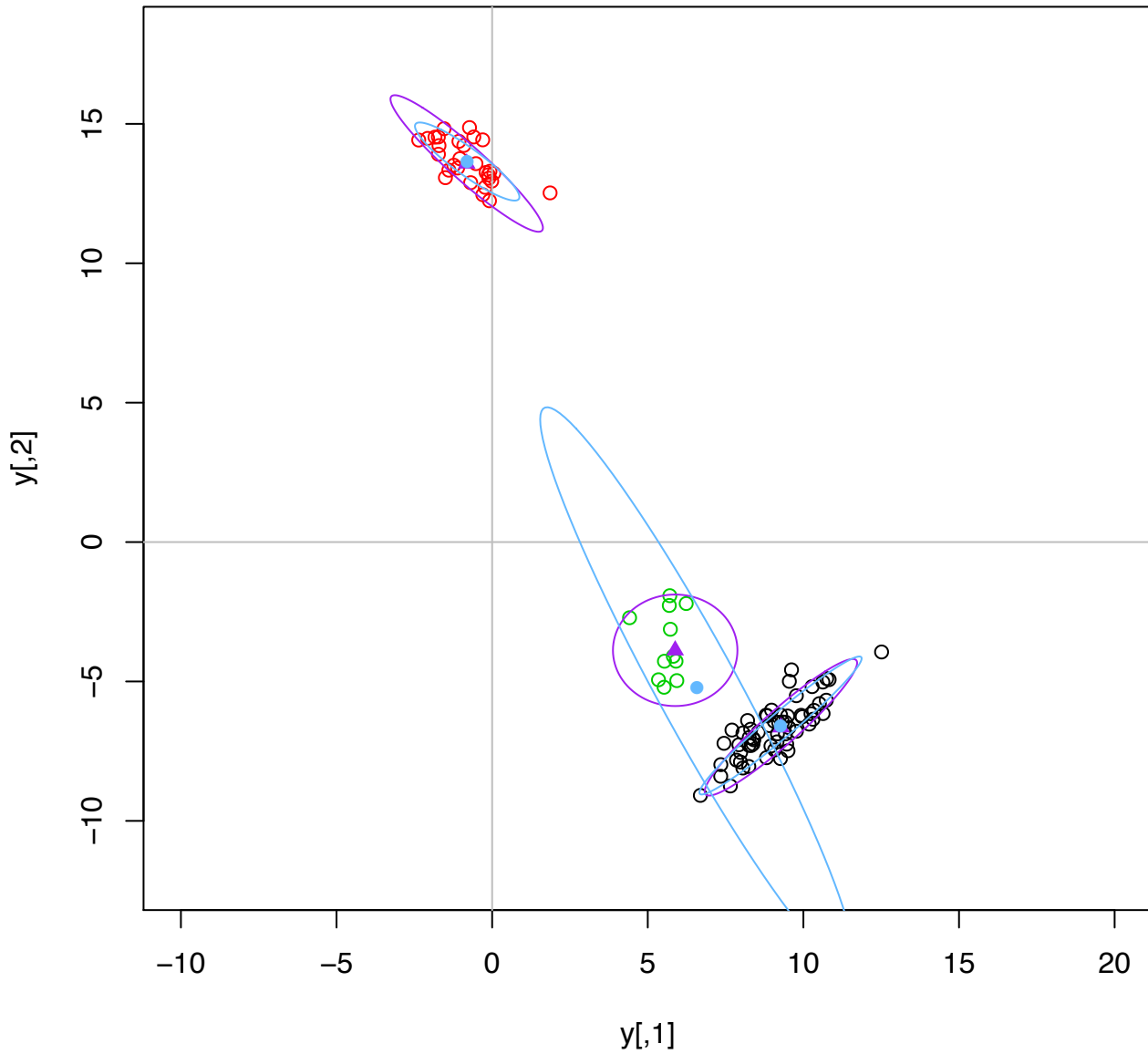**iteration #42:   Q = −189.264310595251**

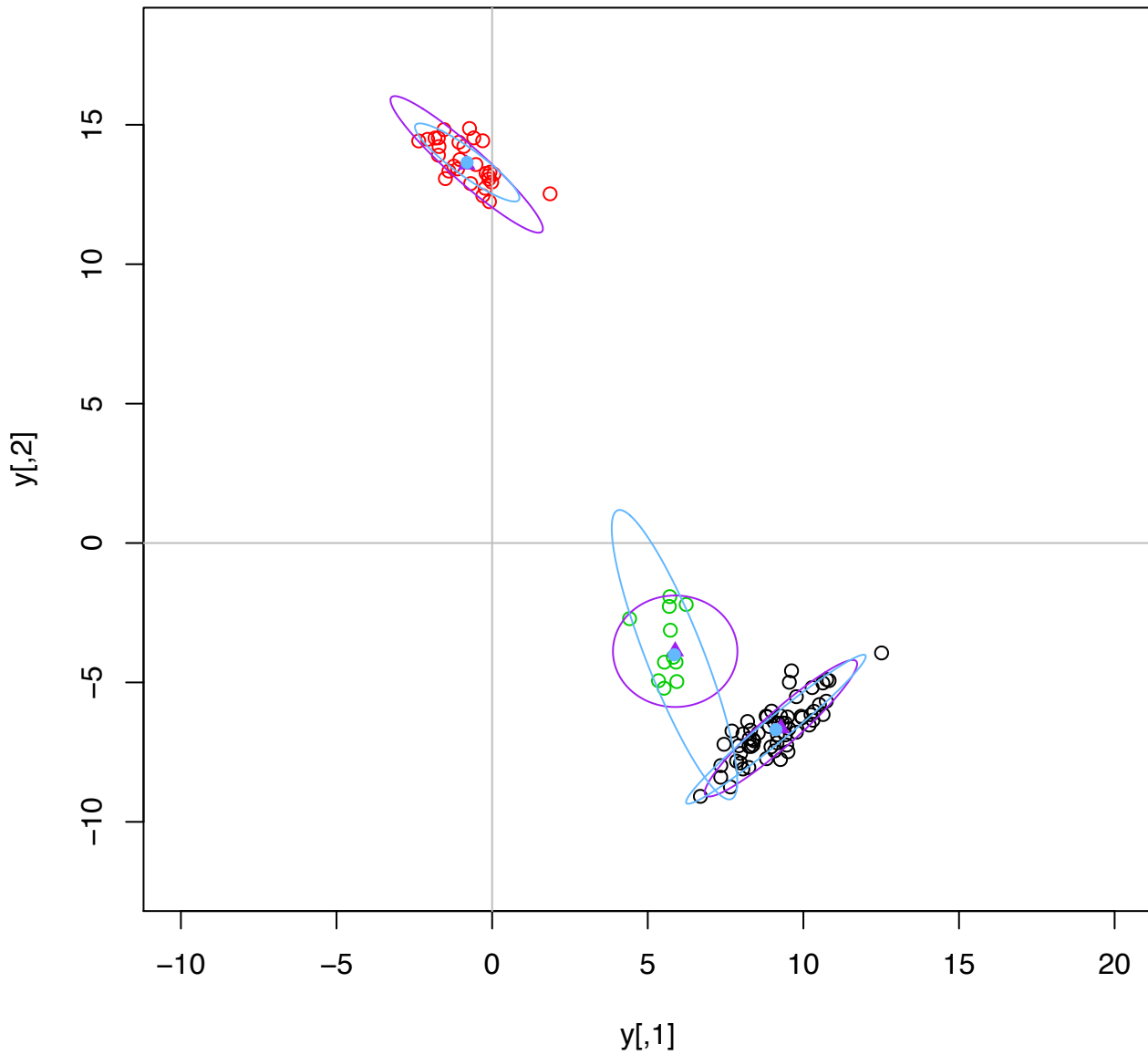**iteration #43:   Q = −182.517058270373**

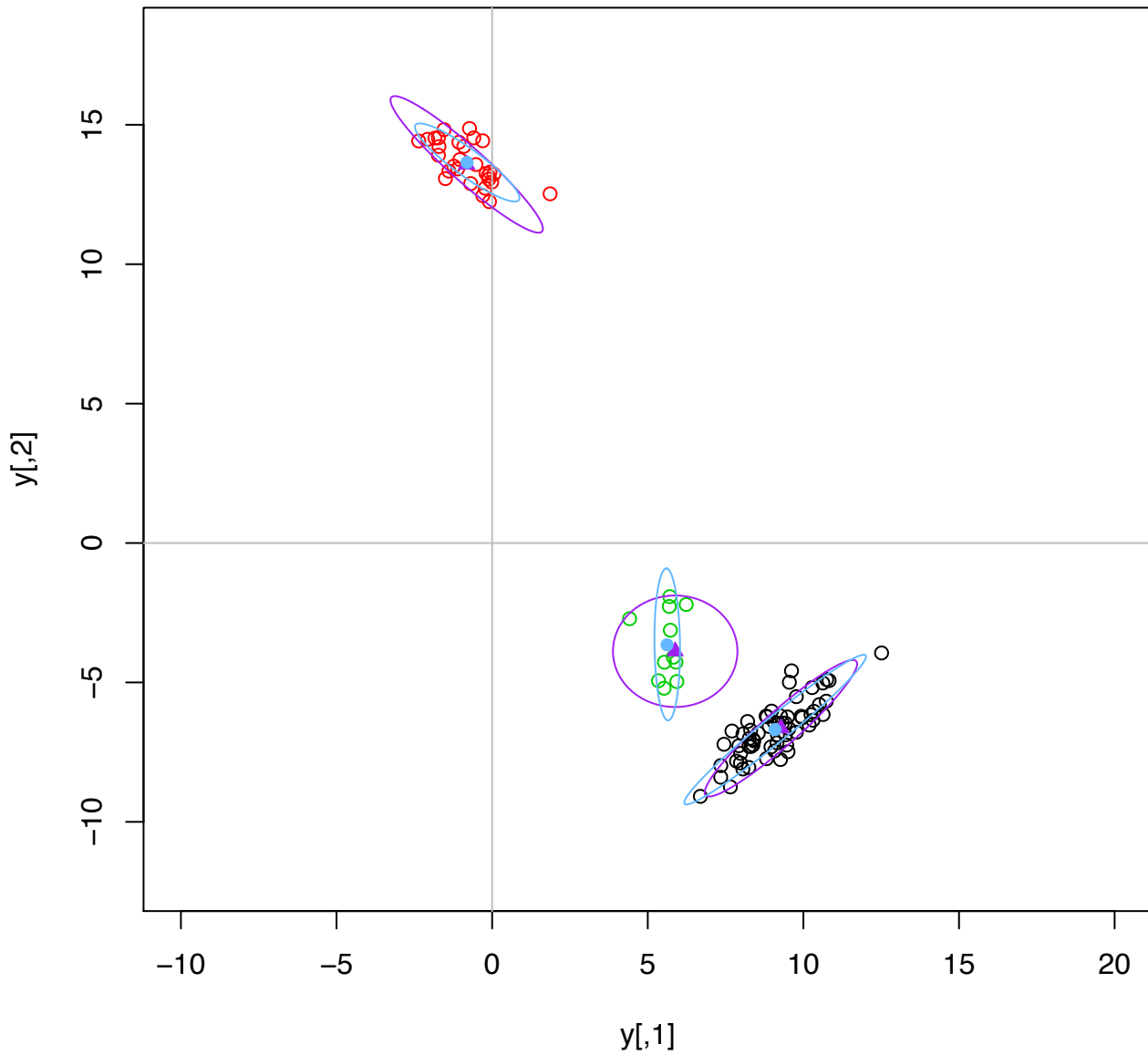**iteration #44:   Q = −171.437712041948**
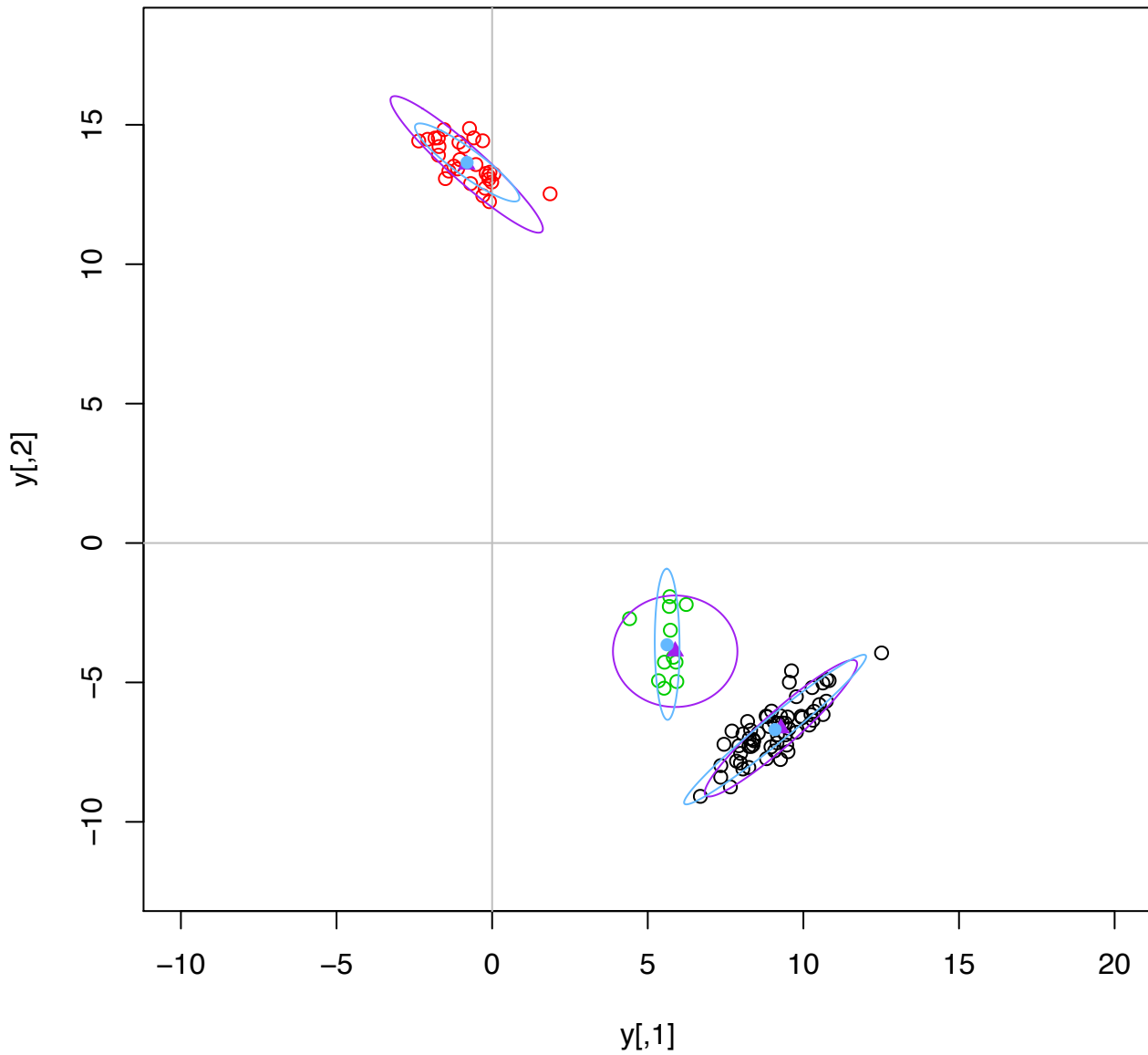
iteration #45:   Q = −154.857584650392
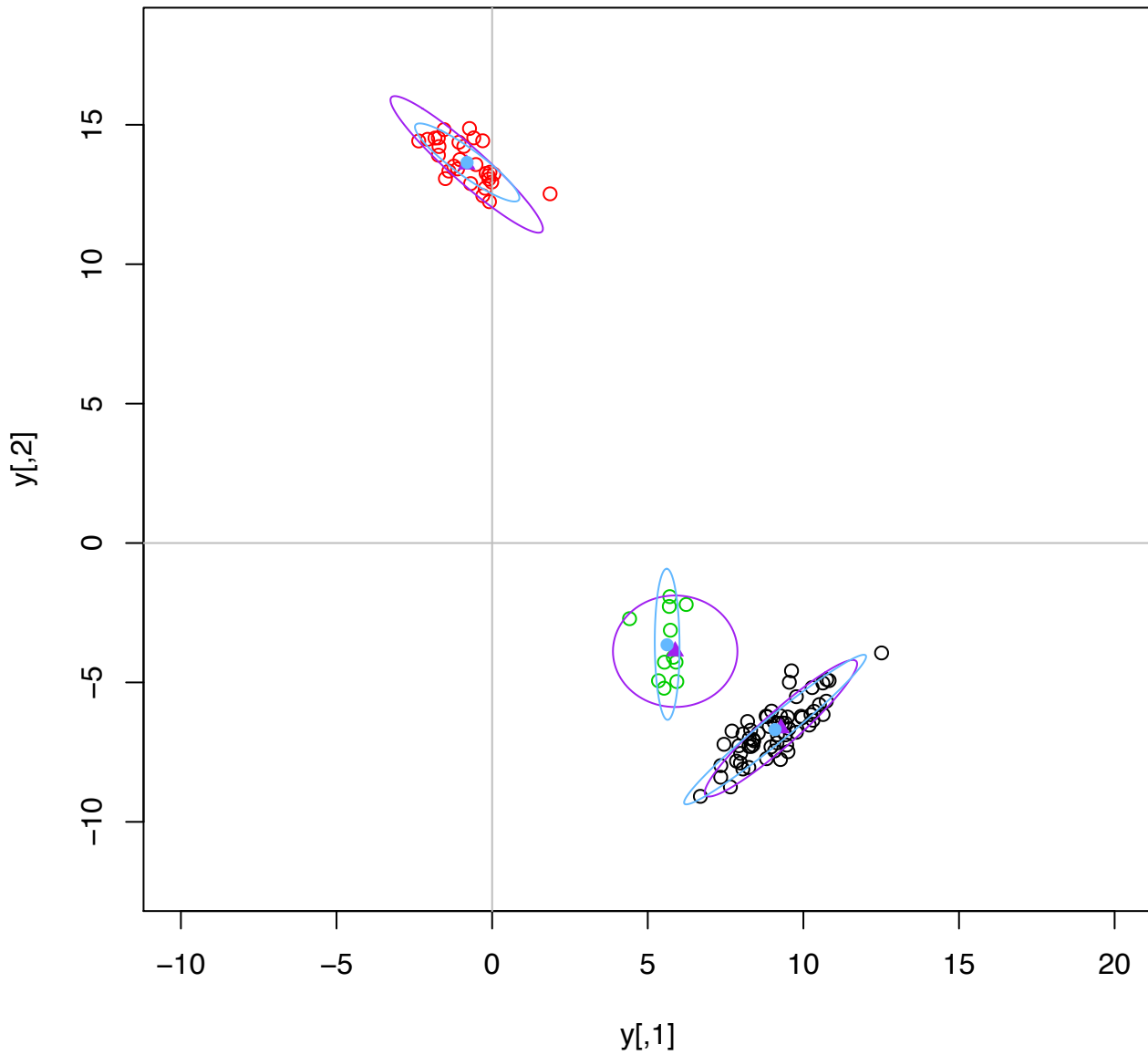
iteration #46:   Q = −142.312004581401

iteration #47:   Q = −138.307797809954

iteration #48:   Q = −138.312599173753

iteration #49:   Q = −138.312875000196

iteration #50:   Q = −138.31288080241