First, manipulate the following expression to remove all “big bars”; i.e. only input signals should be inverted. Don’t include any unnecessary parentheses in your final expression.

$$Y = \overline{(B + \overline{C} \cdot D) \cdot (\overline{A + \overline{C}} + \overline{D})}$$

$$Y = \overline{B} \cdot \left(C + \overline{D}\right) + (A + \overline{C}) \cdot D$$

Then, try to simplify in other ways if possible.

Starting with

$$Y = \overline{B} \cdot \left(C + \overline{D}\right) + (A + \overline{C}) \cdot D$$

Distribution on last term:

$$Y = \overline{B} \cdot \left(C + \overline{D}\right) + A \cdot D + \overline{C} \cdot D$$

DeMorgan’s on last term:

$$Y = \overline{B} \cdot \left(C + \overline{D}\right) + A \cdot D + \overline{C + \overline{D}}$$

Disappearing opposite between first and last term:

$$Y = \overline{B} + A \cdot D + \overline{C + \overline{D}}$$

DeMorgan’s back again:

$$Y = \overline{B} + A \cdot D + \overline{C} \cdot D$$

Other manipulations are possible (like putting D back out), but what makes one version more ‘simple’ than another would need more details (fewer gates, smaller gates, fewer different types of gates, etc.).