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Arduino Code

- `#include<Arduino.h>`
- Define function: `void sevenseg(int a,int b,int c,int d,int e,int f,int g) {`
  - `digitalWrite(2, a);`
  - `digitalWrite(3, b);`
  - `digitalWrite(4, c);`
  - `digitalWrite(5, d);`
  - `digitalWrite(6, e);`
  - `digitalWrite(7, f);`
  - `digitalWrite(8, g);`
- }
- Setup function: `void setup() {`
  - `pinMode(2, OUTPUT);`
  - `pinMode(3, OUTPUT);`
  - `pinMode(4, OUTPUT);`
  - `pinMode(5, OUTPUT);`
  - `pinMode(6, OUTPUT);`
  - `pinMode(7, OUTPUT);`
  - `pinMode(8, OUTPUT);`
- }
- Loop function: `void loop() {`

- `sevenseg(1,0,0,1,1,1,1);`

- }

Karnaugh Map Solution

The minimized function from the given K-map is:

$$F = \overline{X}Y + YZ$$

Explanation:

- For $X = 0$, $Y = 1$, the function is 1 for any value of Z ($\overline{X}Y$).
- For $Y = 1$, $Z = 1$, the function is 1 no matter the value of X (YZ).
- Thus, the minimal form is $F = \overline{X}Y + YZ$.
- The correct option is **(a)**.