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Submitted 10/31/2021

Time Spent: 20 minutes

1. 32'b101100\_00110\_00001\_01010\_00000\_000000
  - a. rs = 5'b00110
  - b. rt = 5'b00001
  - c. rd = 5'b01010
  - d. rest = 11'b00000\_000000
  - e. op = 6'b101100
    - i. RegDst = 1
    - ii. ALUSrc = 0
    - iii. ALUControl[2:0] = 110
    - iv. MemtoReg = 0
2. 32'b100100\_00011\_00100\_01010\_00000\_000000
  - a. rs = 5'b00011
  - b. rt = 5'b00100
  - c. rd = 5'b01010
  - d. rest = 11'b00000\_000000
  - e. op = 6'b100100
    - i. RegDst = 1
    - ii. ALUSrc = 0
    - iii. ALUControl[2:0] = 010
    - iv. MemtoReg = 0
3. 32'b010100\_00000\_01000\_0000\_0000\_0000\_0010
  - a. rs = 5'b00000
  - b. rt = 5'b01000
  - c. imm = 16'b0000\_0000\_0000\_0010
  - d. op = 6'b010100
    - i. RegDst = 0
    - ii. ALUSrc = 1
    - iii. ALUControl[2:0] = 010 (addition)
    - iv. MemtoReg = 0
4. 32'b010101\_00000\_00111\_0000\_0000\_0000\_0010
  - a. rs = 5'b00000
  - b. rt = 5'b00111
  - c. imm = 16'b0000\_0000\_0000\_0010
  - d. op = 6'b010101
    - i. RegDst = 0
    - ii. ALUSrc = 1
    - iii. ALUControl[2:0] = 010 (addition)
    - iv. MemtoReg = 1