## Chapter 6 Understanding and Using Ladder Diagrams

1. Define the term normally open and normally closed.
2. Describe the difference between a wiring diagram and a ladder (schematic) diagram.
3. Explain the operation of the circuit in Figure 6-9 if M contacts 2 and 3 do not close.
4. Contacts wired in parallel have what relationship?

a. AND \_\_\_\_\_\_\_\_\_\_\_\_\_ b. OR \_\_\_\_\_\_\_\_\_\_\_\_

1. Contacts wired in series have what relationship?

a. AND \_\_\_\_\_\_\_\_\_\_\_\_\_ b. OR \_\_\_\_\_\_\_\_\_\_\_\_

1. The two main vertical lines of a ladder diagram are often referred to as:

a. rungs \_\_\_\_\_\_\_\_\_\_\_\_\_ b. power ports \_\_\_\_\_\_\_\_\_\_\_\_

c. rails \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_d. tracks \_\_\_\_\_\_\_\_\_\_\_\_

e. none of the above \_\_\_\_\_\_\_\_

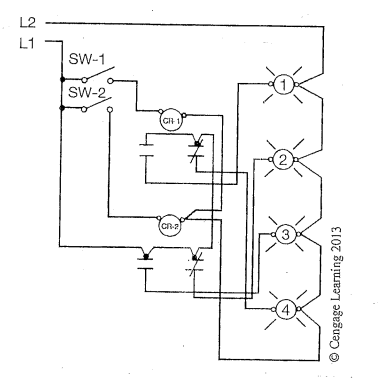
1. The horizontal lines of a ladder diagram are often referred to as:

a. rungs \_\_\_\_\_\_\_\_\_\_\_\_\_ b. power ports \_\_\_\_\_\_\_\_\_\_\_\_

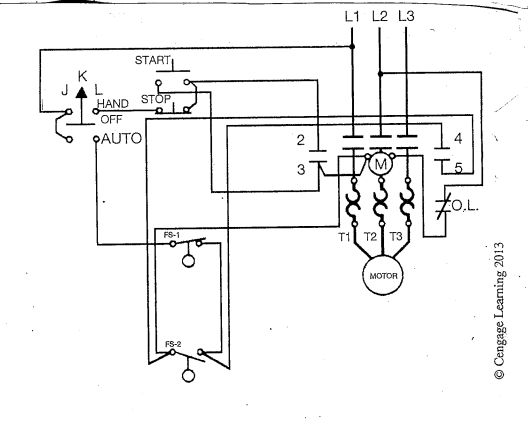
c. rails \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ d. tracks \_\_\_\_\_\_\_\_\_\_\_\_

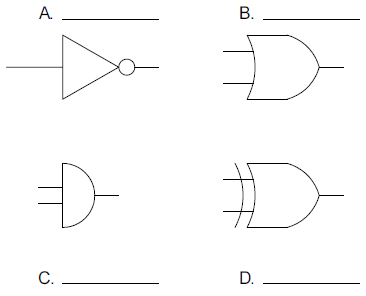
e. none of the above \_\_\_\_\_\_\_\_

1. Devices that are intended to perform a STOP function are normally wired in \_\_\_\_\_ with each other.
2. Devices that are intended to perform a START function are normally wired in \_\_\_\_\_\_ with each other.
3. How are contacts that are associated with relays, motor starters, timer, and the like identified?
4. Convert the wiring diagram on page 137, question 11, into a ladder diagram.



1. Convert the wiring diagram on page 137, question 12, into a ladder diagram.





Identify the following logic gates: