Using *dhclient* vs. *ifconfig* in Linux

Sample Assessment Question (competency-based education model)

Learning Objective: Demonstrate how to enable and configure Dynamic Host Communications Protocol (DHCP) services on a Linux workstation, including assignment of an IPv4 address, and distinguishing between the ***dhclient*** command and the ***ifconfig*** command.

Declarative concept (noun phrase) to be assessed: "Linux network command to obtain an IPv4 address through DHCP"

Example Question: "What is the primary Linux workstation command used to obtain an IPv4 address from a DHCP server?"

Correct Answer (after the dollar-sign prompt):
~$ *sudo dhclient [-4] [-nw] [-v] <interface>* # parameters in brackets are optional

Answer Options:
(a) sudo dhclient [-4] [-nw] [-v] <interface> # parameters in brackets are optional
(b) dhclient [-4] [-nw] [-v] <interface> # parameters in brackets are optional
(c) sudo dhclient -r <interface>
(d) dhclient -r <interface>
(e) sudo ifconfig <interface> down {then} sudo ifconfig <interface> up
(f) ifconfig <interface> down {then} ifconfig <interface> up
(g) sudo ifconfig -a [-v] # parameters in brackets are optional
(h) ifconfig -a [-v] # parameters in brackets are optional
(i) "I do not know the answer"

Claim: Learner has learned the *dhclient* command to obtain an IPv4 address from a DHCP server for a Linux workstation and which must be preceded by the *sudo* command to have administrative privileges; the three optional parameters provide these additional conditions to the command: -4 forces IPv4 instead of IPv6; -nw (no-wait) forces the dhclient daemon to be active before receiving an IP address; -v enables verbose logging (for troubleshooting)

Rebuttal-1: Unless learner believes the *dhclient* command without the *sudo* command will do this, which will result in an error for insufficient privileges to execute the command.

Rebuttal-2: Unless learner believes the *dhclient* command with –r parameter and with the preceding *sudo* command will do this, which actually just releases the current DHCP address lease and does not obtain a new IP address.

Rebuttal-3: Unless learner believes the *dhclient* command with –r parameter and without the preceding *sudo* command will do this, which will result in an error for insufficient privileges to execute the command.

Rebuttal-4: Unless the learner believes the *sudo ifconfig* command sequence (using the *down*, then *up* parameters) will do this, which actually just disables or enables the network interface

and only secondarily will get an IP address after being enabled, only if the dhclient daemon is already running.

Rebuttal-5: Unless the learner believes the *ifconfig* command sequence (using the *down*, then *up* parameters) will do this, which will result in an error for insufficient privileges to execute the command.

Rebuttal-6: Unless learner believes the *sudo ifconfig* command with the –a parameter (with or without the optional –v parameter) and with the preceding *sudo* command will do this, which actually just lists the current network IP settings and does not clear or obtain a new IP address.

Rebuttal-7: Unless learner believes the *ifconfig* command with the –a parameter (with or without the optional –v parameter) and without the preceding *sudo* command will do this, which will result in an error for insufficient privileges to execute the command.

Rebuttal-8: Unless the learner believes they do not know the answer to this question.