The AhaBulb Party Game

STUFF EVERY HVAC TECH SHOULD KNOW

How to play (30 seconds)

1. The reader reads a card and its three answers out loud.
2. Everyone says "One, two, three, Goldilocks!" and holds up 1, 2, or 3 fingers.
3. The reader flips the card and reads the answer and the Why.
4. Everyone who was right takes a point.
5. The reader reads the joke with a straight face. Anyone laughs or groans? The reader takes a point. Nobody got it right? The reader takes a point.
6. Pass the deck left. Most points when the points run out wins.

What you need

These cards and the point tokens on the last two pages. No tokens? Use coins, buttons, pebbles, or marshmallows. 3 to 10 players, ages 8 and up.

Expert rule: Bet It

Before the reader flips the card, you may put one of your points on your answer. Right: take your normal point plus one extra. Wrong: your bet goes back to the pile. That's it.

Printing

Print single-sided, on cardstock if you have it. Cut on the dashed lines. Each card is a 3.5 x 5 inch index card. The answer half is upside down on purpose, so the table can't peek.

Cards 1 to 50 of 102. More cards and the free daily online game at sesk.info. Built 2026-10-14.

TRADES & SHOP

About how many ozone molecules can one chlorine atom destroy before it leaves the stratosphere?

- **A** Over 100,000
- **B** About 10
- **C** Exactly one

FLIP FOR THE ANSWER

A Over 100,000

WHY Chlorine is not used up when it breaks apart an ozone molecule, so it keeps going. That is why chlorine from CFC and HCFC refrigerants is such a big deal. Leaked refrigerant can reach the stratosphere and do long-lasting damage.

STRAIGHT FACE
One chlorine atom can wreck 100,000 ozone molecules. Talk about a bad roommate.

SESK.INFO #4946

TRADES & SHOP

In which layer of the atmosphere is most ozone found?

- **A** The troposphere, right at ground level
- **B** The stratosphere, about 15 to 30 km up
- **C** The mesosphere, near the edge of space

FLIP FOR THE ANSWER

B The stratosphere, about 15 to 30 km up

WHY Most of the atmosphere's ozone sits in a layer in the stratosphere. That is why it is called the ozone layer. It soaks up much of the sun's harmful ultraviolet light before it reaches us.

STRAIGHT FACE
The ozone layer is a sunscreen for the whole planet, and nobody forgets to reapply it.

SESK.INFO #4947

TRADES & SHOP

Ozone depletion potential (ODP) compares chemicals to which compound, defined as 1.0?

- **A** R-22
- **B** R-134a
- **C** CFC-11

FLIP FOR THE ANSWER

C CFC-11

WHY ODP compares a chemical's effect on ozone to the same mass of CFC-11. A bigger number means more ozone damage. A zero means none.

STRAIGHT FACE
Why did the chemist keep his Nobel Prize medal in the freezer? Because he wanted a cool reaction.

SESK.INFO #4948

TRADES & SHOP

Why do HFC refrigerants have an ozone depletion potential of zero?

- **A** They do not contain chlorine
- **B** They break down before reaching the stratosphere
- **C** They are heavier than air and stay near the ground

FLIP FOR THE ANSWER

A They do not contain chlorine

WHY HFCs were developed as replacements for ozone-depleting substances. Without chlorine or bromine, they do not attack the ozone layer. But some HFCs are strong greenhouse gases, which is a different problem.

STRAIGHT FACE
What did zero say to the number eight? Nice belt.

SESK.INFO #4949

TRADES & SHOP

The Kigali Amendment to the Montreal Protocol extended controls to which refrigerant family?

A CFCs
B HFCs
C Halons

FLIP FOR THE ANSWER

B HFCs

WHY The original Montreal Protocol went after ozone-depleting chemicals. Kigali added a phase down of HFCs, which do not harm ozone but can warm the climate.

STRAIGHT FACE
Kigali wants HFCs to cool it. Literally.

SESK.INFO #4953

TRADES & SHOP

A refrigerant has a GWP of 700. What does that mean?

A It destroys 700 times more ozone than CFC-11
B It stays in the air for exactly 700 days
C Climate effect 700 times that of CO2

FLIP FOR THE ANSWER

C Climate effect 700 times that of CO2

WHY Global warming potential (GWP) compares a gas to carbon dioxide, which has a GWP of 1. A GWP of 700 means the gas traps heat 700 times as strongly per kilogram.

STRAIGHT FACE
How do you scare a snowman? Two words: Global Warming.

SESK.INFO #4951

TRADES & SHOP

In what year was the Montreal Protocol on ozone-depleting substances signed?

A 1987
B 1972
C 1997

FLIP FOR THE ANSWER

A 1987

WHY Countries first agreed to cooperate on the ozone layer in the 1985 Vienna Convention. Two years later they signed the Montreal Protocol, which set the phaseout of ozone-depleting chemicals like CFCs.

STRAIGHT FACE
What is the fruitiest subject at school? History, because it's full of dates!

SESK.INFO #4952

TRADES & SHOP

Which chemical family is R-22 refrigerant in?

A CFC
B HCFC
C HFC

FLIP FOR THE ANSWER

B HCFC

WHY EPA's test topics say R-12 is a CFC, R-22 is an HCFC and R-134 is an HFC. CFCs and HCFCs contain chlorine, so they can deplete ozone. HFCs do not.

STRAIGHT FACE
Why did the HVAC tech have licenses in different states? He heard that Freon changes states.

SESK.INFO #4950

TRADES & SHOP

In the US, the ban on producing and importing CFCs took effect on January 1 of which year?

- **A** 1987
- **B** 2010
- **C** 1996

FLIP FOR THE ANSWER

C 1996

WHY Section 604 of the Clean Air Act set the phaseout for Class I ozone-depleting substances. Halons were banned first, then CFCs and most other Class I chemicals two years later.

STRAIGHT FACE
Why did the air conditioner join the secret service?
Because it was an expert at keeping things cool under cover!

SESK.INFO #4954

TRADES & SHOP

Since which year has the US banned new production and import of R-22?

- **A** 2020
- **B** 1996
- **C** 2030

FLIP FOR THE ANSWER

A 2020

WHY HCFC-22 was phased out in steps. Since 2020 there has been no new production or import of R-22. EPA says some HCFC uses continue, such as servicing existing equipment. All HCFCs end in 2030.

STRAIGHT FACE
What did the air conditioner say at its retirement party? I'm a big fan of all of you. I couldn't have kept my cool without you.

SESK.INFO #4955

TRADES & SHOP

Which Clean Air Act section created the national refrigerant recycling and emission reduction program?

- **A** Section 604
- **B** Section 608
- **C** Section 605

FLIP FOR THE ANSWER

B Section 608

WHY Section 608 is the National Recycling and Emission Reduction Program. It is why technicians need certification, must recover refrigerant, and cannot vent it. Sections 604 and 605 set the phaseouts for Class I and Class II chemicals.

STRAIGHT FACE
My HVAC guy is pretty unprepared. I told him that before he comes over he better get his ducts in a row.

SESK.INFO #4956

TRADES & SHOP

The AIM Act requires US HFC production and use to fall by how much from baseline by 2036?

- **A** 25 percent
- **B** 100 percent
- **C** 85 percent

FLIP FOR THE ANSWER

C 85 percent

WHY The American Innovation and Manufacturing Act phases HFCs down in steps. EPA controls this with an allowance program for producers and importers of bulk HFCs.

STRAIGHT FACE
What makes the calendar seem so popular?
Because it has a lot of dates!

SESK.INFO #4957

TRADES & SHOP

EPA's 2024 HFC leak repair rule applies to appliances holding at least how many pounds of refrigerant?

- A 15 pounds
- B 5 pounds
- C 50 pounds

FLIP FOR THE ANSWER

A 15 pounds

WHY The Emissions Reduction and Reclamation rule extended leak repair to appliances with a full charge of 15 pounds or more of an HFC or substitute with a GWP above 53. Residential and light commercial AC and heat pumps are excluded.

STRAIGHT FACE
What's an HVAC technician's favorite movie? Leak Hard! They always root for the hero patching things up!

SESK.INFO #4958

TRADES & SHOP

Is it legal to intentionally vent HFC refrigerant like R-410A while servicing equipment?

- A Yes, because HFCs do not harm ozone
- B No, the venting ban covers HFC substitutes too
- C Yes, if it is under one pound

FLIP FOR THE ANSWER

B No, the venting ban covers HFC substitutes too

WHY Section 608 prohibits intentionally venting ozone-depleting refrigerants and their substitutes, such as HFCs, while maintaining, servicing, repairing or disposing of equipment. Recover it instead.

STRAIGHT FACE
Why did the HVAC tech go to therapy? He had too many vents to clear!

SESK.INFO #4959

TRADES & SHOP

Which of these is exempt from the EPA venting prohibition in any application?

- A R-134a
- B R-22
- C Nitrogen

FLIP FOR THE ANSWER

C Nitrogen

WHY The venting rule lists a few substitutes that are exempt, including carbon dioxide, nitrogen and water in any application. Refrigerants like R-134a and R-22 are not exempt, so they must be recovered.

STRAIGHT FACE
Why was the air conditioner so annoyed? It just needed to vent.

SESK.INFO #4960

TRADES & SHOP

A tech has recovered refrigerant into a cylinder. Knowingly releasing it afterward is what?

- A A violation of the venting prohibition
- B A de minimis release, which is allowed
- C Allowed if under one pound

FLIP FOR THE ANSWER

A A violation of the venting prohibition

WHY Small accidental losses during a good-faith recovery are treated as de minimis. But once refrigerant has been recovered, knowingly letting it out is a violation of the venting prohibition.

STRAIGHT FACE
Why did the detective interrogate the air conditioner? Because it had the best leads on why things were getting frosty!

SESK.INFO #4961

TRADES & SHOP

Which term means removing refrigerant from a system and storing it in an outside container, with no testing or processing?

A Recycle
B Recover
C Reclaim

FLIP FOR THE ANSWER

B Recover

WHY To recover is to remove refrigerant in any condition and store it in an external container. Recycling cleans it for reuse by the same owner, and reclaiming reprocesses it to new-product purity.

STRAIGHT FACE
When does a cart come before a horse? In the dictionary!

SESK.INFO #4962

TRADES & SHOP

Which term means cleaning recovered refrigerant for reuse in equipment owned by the same owner?

A Recover
B Reclaim
C Recycle

FLIP FOR THE ANSWER

C Recycle

WHY Recycling extracts refrigerant and cleans it, usually by separating oil and running it through filter-driers. Unlike reclaiming, it does not need to meet full purity specs, so it stays with the same owner.

STRAIGHT FACE
Why did the air filter break up with the exhaust fan? Because it felt unappreciated, always taking the dirt and never getting any fresh air!

SESK.INFO #4963

TRADES & SHOP

Which term means reprocessing refrigerant to meet new-product purity specs, verified by analysis?

A Reclaim
B Recover
C Recycle

FLIP FOR THE ANSWER

A Reclaim

WHY Reclaiming means reprocessing recovered refrigerant to the specifications in appendix A, which are based on AHRI Standard 700, and verifying that it meets them. Only then can it be sold.

STRAIGHT FACE
Reclaim is the only R that gets a lab report, a purity score and a second career.

SESK.INFO #4964

TRADES & SHOP

A tech recovers refrigerant from one customer's unit. Without reclaiming, where can it go?

A Into any customer's unit on the same truck
B Onto the wholesale market
C Into another appliance owned by the same customer

FLIP FOR THE ANSWER

C Into another appliance owned by the same customer

WHY EPA allows recovered used refrigerant to be charged into another appliance owned by the same customer. To move it to a different owner or sell it, it must be reclaimed first.

STRAIGHT FACE
Why did the furnace break up with the air conditioner? It was always hot and cold between them!

SESK.INFO #4965

TRADES & SHOP

Which Section 608 certification covers small appliances, high-pressure and low-pressure equipment?

- **A** Universal
- **B** Type II only
- **C** Core only

FLIP FOR THE ANSWER

A Universal

WHY Type I covers small appliances, Type II covers medium, high and very high-pressure equipment, and Type III covers low-pressure equipment. A technician who works on all of them must be certified as Universal.

STRAIGHT FACE
Why did the thermostat go to school? Because it wanted to be set for success!

SESK.INFO #4966

TRADES & SHOP

How long can someone work as a registered apprentice before they need their own Section 608 certification?

- **A** Six months
- **B** Two years
- **C** Five years

FLIP FOR THE ANSWER

B Two years

WHY Apprentices may work on appliances before they are certified, but only while closely and continually supervised by a technician holding the right certification. Apprentice status lasts two years from first registering.

STRAIGHT FACE
Why do bicycles fall over? Because they are two-tired!

SESK.INFO #4967

TRADES & SHOP

Who issues your Section 608 certification card?

- **A** The EPA itself
- **B** Your state HVAC board
- **C** The EPA-approved organization that certified you

FLIP FOR THE ANSWER

C The EPA-approved organization that certified you

WHY EPA does not issue certification cards. The company or organization that tested and certified you does, and that is who to contact to replace a lost one.

STRAIGHT FACE
How do you know the thermometer was good at school? It has a lot of degrees.

SESK.INFO #4968

TRADES & SHOP

Under EPA's sales restriction, who can a seller legally sell refrigerant to for use in equipment?

- **A** A certified technician, or a buyer who employs one
- **B** Anyone over 18 with a photo ID
- **C** Anyone with a business license

FLIP FOR THE ANSWER

A A certified technician, or a buyer who employs one

WHY Refrigerant sellers must verify that the buyer is certified or employs at least one certified technician and can show proof. Selling to someone who does not meet this is a violation.

STRAIGHT FACE
The refrigerant counter has a simple rule: no card, no cold.

SESK.INFO #4969

TRADES & SHOP

Who certifies recovery and recycling equipment before technicians can use it?

- **A** The technician who owns it
- **B** An EPA-approved third-party testing organization
- **C** The refrigerant supplier

FLIP FOR THE ANSWER

B An EPA-approved third-party testing organization

WHY Recovery and recycling machines must be certified through an approved testing organization. They must also have low-loss fittings on all hoses. Using uncertified equipment violates the rules.

STRAIGHT FACE
What's an HVAC technician's favorite type of music? Cool Jazz, it always keeps them chilled out!

TRADES & SHOP

How long must techs keep records of refrigerant recovered from disposed appliances holding 5 to 50 pounds?

- **A** One year
- **B** Ten years
- **C** Three years

FLIP FOR THE ANSWER

C Three years

WHY EPA says these disposal records can be paper or electronic, in any convenient format, and must be kept for three years. An employer can keep them for its technicians.

STRAIGHT FACE
Three years of records is a lot of paper. That is why the filing cabinet is the real hero.

TRADES & SHOP

For appliances holding 50 or more pounds of ozone-depleting refrigerant, what must you give the customer after adding refrigerant?

- **A** An invoice showing the amount of refrigerant added
- **B** A copy of your certification card
- **C** A copy of the gauge readings

FLIP FOR THE ANSWER

A An invoice showing the amount of refrigerant added

WHY On appliances that normally hold 50 or more pounds of ozone-depleting refrigerant, EPA requires the technician to provide documentation of the amount added. It helps track leaks.

STRAIGHT FACE
How do snowmen pay their bills? With cold hard cash.

TRADES & SHOP

For big ozone-depleting appliances, does a standing pressure decay test alone count as a leak inspection?

- **A** Yes, if it runs 24 hours
- **B** Yes, if done with nitrogen
- **C** No, it shows leaking but not where the leak is

FLIP FOR THE ANSWER

C No, it shows leaking but not where the leak is

WHY EPA defines a leak inspection as examining the appliance to determine the location of leaks. Pressure decay tests, sight glass checks and charging charts can show leaking, but must be paired with a method that locates the leak.

STRAIGHT FACE
Why did the sports car fail its test? It couldn't handle the pressure.

TRADES & SHOP

What is the maximum a refrigerant cylinder should be filled, by volume?

- **A** 80 percent
- **B** 90 percent
- **C** 100 percent

FLIP FOR THE ANSWER

C Refill it

WHY Disposable cylinders are not built for repeated filling. Use DOT-approved reusable recovery cylinders for recovered refrigerant.

STRAIGHT FACE
How many books can you put into an empty backpack? One! After that it's not empty.

SESK.INFO #4974

TRADES & SHOP

Reusable refrigerant recovery cylinders are identified by which color code?

- **A** Red and white
- **B** Yellow and gray
- **C** Green and blue

FLIP FOR THE ANSWER

B Yellow and gray

WHY EPA's test topics say reusable recovery cylinders must be DOT approved and use the yellow and gray color code. Disposable cylinders must never be refilled.

STRAIGHT FACE
The gray and yellow recovery cylinder is a bumblebee with a pressure problem.

SESK.INFO #4975

TRADES & SHOP

A disposable refrigerant cylinder is empty. What should you never do with it?

- **A** Recycle it as scrap metal
- **B** Label it as empty
- **C** Refill it

FLIP FOR THE ANSWER

A 80 percent

WHY Liquid refrigerant expands as it warms. Leaving about 20 percent of the cylinder empty gives room for expansion and head pressure. An overfilled cylinder can burst.

STRAIGHT FACE
Why do refrigerants make such terrible comedians? Because they always crack under pressure!

SESK.INFO #4976

TRADES & SHOP

Which of these is a recognized hazard of refrigerant exposure?

- **A** Oxygen deprivation
- **B** Radiation burns
- **C** Lead poisoning

FLIP FOR THE ANSWER

A Oxygen deprivation

WHY Refrigerant leaking in a closed space can displace the air you need to breathe. EPA's test topics list oxygen deprivation, cardiac effects, frostbite and long-term hazards as exposure risks.

STRAIGHT FACE
Why do fans adore the HVAC system? Because it's the only thing that circulates their love in the air!

SESK.INFO #4977

TRADES & SHOP

Which gas should be used to pressurize a system for leak testing?

- **A** Compressed shop air
- **B** Dry nitrogen
- **C** Oxygen

FLIP FOR THE ANSWER

B Dry nitrogen

WHY EPA's Core test topics call for nitrogen rather than oxygen or compressed air for leak detection. Lennox's instructions agree and say compressed air or oxygen shall not be used for purging.

STRAIGHT FACE
Want to hear a joke about nitrogen oxide? NO!

SESK.INFO #4978

TRADES & SHOP

Can any new refrigerant simply be swapped in as a 'drop-in' replacement with no changes?

- **A** Yes, if the pressures are similar
- **B** Yes, if the label says drop-in
- **C** No, EPA says there are no true drop-in replacements

FLIP FOR THE ANSWER

C No, EPA says there are no true drop-in replacements

WHY EPA's test topics include the absence of drop-in replacements. Substitute refrigerants can be incompatible with the oils and parts used with older refrigerants, so a retrofit needs to be planned.

STRAIGHT FACE
There is no such thing as a drop-in. Anything that drops in still needs paperwork.

SESK.INFO #4979

TRADES & SHOP

What does 'fractionation' mean for a blend refrigerant?

- **A** Components of the blend leak at different rates
- **B** The blend splits into two cylinders
- **C** The oil separates from the refrigerant

FLIP FOR THE ANSWER

A Components of the blend leak at different rates

WHY Refrigerant blends combine two or more chemicals. When a blend leaks, the components can escape at different rates, so what is left in the system no longer has the original mix.

STRAIGHT FACE
Why was the gas chromatograph feeling distressed? Because it was suffering from separation anxiety.

SESK.INFO #4980

TRADES & SHOP

Which part of the refrigeration cycle squeezes refrigerant vapor to a high pressure and temperature?

- **A** The evaporator
- **B** The compressor
- **C** The condenser

FLIP FOR THE ANSWER

B The compressor

WHY The compressor takes in low-pressure vapor and raises its pressure and temperature, which takes work input. Heat transfer happens at the condenser and evaporator, not here.

STRAIGHT FACE
Why did the AC compressor write a self-help book? Because it knew the key to staying cool under pressure!

SESK.INFO #4981

TRADES & SHOP

In the refrigeration cycle, where does refrigerant boil and absorb heat from the air being cooled?

- **A** The evaporator
- **B** The condenser
- **C** The compressor

FLIP FOR THE ANSWER

A The evaporator

WHY Low-pressure refrigerant enters the evaporator, boils, and absorbs heat from the air or space being cooled. That is the moment of cooling in the system.

STRAIGHT FACE
It's so hot, when I turned on my lawn sprinkler, all I got was steam!

SESK.INFO #4983

TRADES & SHOP

In an air-cooled system, where does the refrigerant give up heat to the outdoor air?

- **A** The evaporator
- **B** The compressor
- **C** The condenser

FLIP FOR THE ANSWER

C The condenser

WHY In the condenser, hot refrigerant vapor releases heat to the air passing over the coil. The refrigerant changes from superheated vapor to sub-cooled liquid.

STRAIGHT FACE
Why did the heater go to the talk show? Because it wanted to blow hot air in front of a live audience!

SESK.INFO #4982

TRADES & SHOP

To convert a gauge reading in psig to absolute pressure in psia, what do you add?

- **A** About 29.9
- **B** About 32
- **C** About 14.7

FLIP FOR THE ANSWER

C About 14.7

WHY Gauges read pressure above atmospheric. Absolute pressure counts from a perfect vacuum, so you add atmospheric pressure, about 14.7 psi at sea level. EPA's test topics note this when using a temperature-pressure chart.

STRAIGHT FACE
Why can't your nose be 12 inches long? Because then it would be a foot!

SESK.INFO #4985

TRADES & SHOP

What drops the refrigerant's pressure before it enters the evaporator?

- **A** The compressor
- **B** The expansion valve
- **C** The filter-drier

FLIP FOR THE ANSWER

B The expansion valve

WHY High-pressure liquid passes through the expansion valve, and pressure drops to evaporator pressure. Some of the liquid flashes to vapor, so the refrigerant leaves cold, as a mix of liquid and vapor.

STRAIGHT FACE
The expansion valve is the system's bouncer. It decides how much gets in.

SESK.INFO #4984

TRADES & SHOP

DOT rules for liquefied gas cylinders say the liquid must never do what at temperatures up to 131 F?

- **A** Fall below half of the cylinder
- **B** Completely fill the cylinder
- **C** Touch the cylinder valve

FLIP FOR THE ANSWER

B Completely fill the cylinder

WHY A liquid-full cylinder has no room for the liquid to expand when it warms. DOT requires a vapor space to remain. This is the idea behind the 80 percent fill rule.

STRAIGHT FACE
A full cylinder has no sense of humor. It will pop at the first warm joke.

SESK.INFO #4986

TRADES & SHOP

Why do techs evacuate a system with a vacuum pump at the end of service?

- **A** To add oil
- **B** To cool the refrigerant
- **C** To remove air and moisture

FLIP FOR THE ANSWER

C To remove air and moisture

WHY A vacuum pump pulls air and moisture out of a system before it is charged. EPA's Core test topics include the need to evacuate a system at the end of service.

STRAIGHT FACE
Deep thought of the day? When you clean a vacuum cleaner, you become a vacuum cleaner.

SESK.INFO #4987

TRADES & SHOP

When pressurizing a system with nitrogen, what does EPA's Core outline say to use with the cylinder?

- **A** A refrigerant scale only
- **B** A pressure regulator and relief valve
- **C** A vacuum pump in line

FLIP FOR THE ANSWER

B A pressure regulator and relief valve

WHY EPA's Core safety topics call for a pressure regulator and relief valve with nitrogen. The regulator sets a safe test pressure, and the relief valve lets gas out if pressure climbs too high.

STRAIGHT FACE
Why was the diamond feeling very stressed? Because it had been under a lot of pressure.

SESK.INFO #4988

TRADES & SHOP

When recovering refrigerant, what does EPA's Core outline say technicians need to avoid?

- **A** Recovering liquid before vapor
- **B** Weighing the cylinder while filling
- **C** Mixing different refrigerants together

FLIP FOR THE ANSWER

C Mixing different refrigerants together

WHY EPA's Core topics list the need to avoid mixing refrigerants. Reclaimers must bring each refrigerant back to its own purity specs, so a mixed batch may not be reclaimable.

STRAIGHT FACE
Why are chemists so good at solving problems? They have all the solutions!

SESK.INFO #4989

TRADES & SHOP

On an HFC system with POE oil, why should line set caps stay on until you connect them?

- **A** The caps hold the factory charge
- **B** Open tubing can freeze shut
- **C** POE oil absorbs moisture very quickly

FLIP FOR THE ANSWER

C POE oil absorbs moisture very quickly

WHY Polyolester oil, used with HFC refrigerants, soaks up moisture fast. Lennox says to keep the refrigerant system closed as much as possible, and warns that leaving lines open means extra evacuation to remove moisture.

STRAIGHT FACE
POE oil is thirsty. It will drink any moisture within reach.

SESK.INFO #4990

TRADES & SHOP

R-32 and R-454B are classed A2L. In plain words, what kind of refrigerants are they?

- **A** Mildly flammable
- **B** Nonflammable
- **C** Highly toxic

FLIP FOR THE ANSWER

A Mildly flammable

WHY EPA describes refrigerants such as HFC-32 and R-454B as mildly flammable, and its SNAP list shows them as class A2L. They need extra care around ignition sources.

STRAIGHT FACE
Why was the campfire so good at telling stories? It was always lit.

SESK.INFO #4991

TRADES & SHOP

Which leak detector must never be used on a system with a mildly flammable A2L refrigerant?

- **A** An electronic detector
- **B** A halide torch
- **C** Bubble solution

FLIP FOR THE ANSWER

B A halide torch

WHY Lennox says no potential sources of ignition may be used to search for refrigerant leaks. A halide torch or any other detector using a naked flame shall not be used. Bubble solutions and suitable electronic detectors are acceptable.

STRAIGHT FACE
Did you hear about the HVAC technicians who got into an argument? At first, it was heated, but they got some fresh air then things cooled off.

SESK.INFO #4992

TRADES & SHOP

Under EPA rules, a small appliance holds how much refrigerant at most?

- **A** 15 pounds or less
- **B** 50 pounds or less
- **C** 5 pounds or less

FLIP FOR THE ANSWER

C 5 pounds or less

WHY EPA defines a small appliance as a factory-sealed unit with five pounds or less of refrigerant. Think home fridges, window air conditioners and vending machines. Anything bigger falls under the Type II or Type III rules.

STRAIGHT FACE
Is your refrigerator running? You better catch it before it gets away!

SESK.INFO #4993

TRADES & SHOP

Using post-1993 recovery equipment on a small appliance with a working compressor, how much must you recover?

- **A** 80 percent
- **B** 90 percent
- **C** 99 percent

FLIP FOR THE ANSWER

B 90 percent

WHY With recovery equipment made on or after November 15, 1993, recover 90 percent when the appliance's compressor is running. If the compressor is not working, the target drops to 80 percent. Or you can pull a four-inch vacuum.

STRAIGHT FACE
My fridge recovered 90 percent of its refrigerant. It is now an A student.

SESK.INFO #4995

TRADES & SHOP

Which of these counts as a small appliance under EPA's definition?

- **A** A factory-sealed window air conditioner
- **B** A supermarket refrigeration rack
- **C** A centrifugal chiller

FLIP FOR THE ANSWER

A A factory-sealed window air conditioner

WHY EPA's definition lists room air conditioners, including window units, as small appliances. They come charged and sealed from the factory with five pounds or less. Racks and chillers are far larger and are built or charged in the field.

STRAIGHT FACE
What do computers and air conditioners have in common? They both become useless when you open windows.

SESK.INFO #4994

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AhaBulb POINT

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AhaBulb POINT