Pilot Career Solutions

Written test drills

42 questions on the areas private pilot students miss most,
laid out like the test screen, figures and all.
Answers, reasons, and sources at the back.

November 2026 edition

Every miss is a reading assignment.

Free. The same drills run online at pilotcareersolutions.com/practice.
Pilot Career Solutions teaches in ground and simulator settings only, never in a real aircraft.

Practice online, free
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HOW TO USE THIS

Three sets, aimed at the misses

The FAA publishes the knowledge-test areas students miss most. For the private pilot test, three stand out. Each set below drills one of them and the elements around it.

Set	Area	ACS code on the FAA list	Missed	Questions
A	Emergency descent: airspeed and its limits (PA.IX.A)	PA.IX.A.K3	73.33%	12
B	Flight instruments: how they work and how they fail (PA.VIII.C, PA.VI.A.K2)	PA.VIII.C.K1c	77.24%	13
C	Pilotage and dead reckoning, worked on a chart (PA.VI.A)	PA.VI.A.K1	86.83%	17

- **Do it like the test.** Two minutes a question. Cover the key. Mark a flag box when you are unsure, and come back.
- **Read the figure first.** Find the legend, scale, and units before you read the stem, as you will on the screen.
- **Score it, then read.** For every miss and every flag, read the reason and the source at the back. Can you explain it out loud? Then it is learned.
- **Each question carries its ACS code,** the same code that would print on your score report if you missed it on the real test.
- **Teach it back.** The FAA's ACS FAQ expects the examiner to re-test every code on your report in a scenario, so after scoring a drill, say the rule aloud and apply it to a changed number.
- **The same 42 questions are online, free,** at pilotcareersolutions.com/practice (the drills on the areas students miss most), where every miss shows the reason and the page to read; the whole ground-school bank is there too.

These are practice questions written in the FAA's style from the FAA handbooks, not questions from the FAA's test. The figures come from the handbooks, so you can find each one and read the page around it.

SET A

Emergency descent: airspeed and its limits (PA.IX.A)

QUESTION 1 · WT-001 · PA.IX.A.K1 [ ] flag

An emergency descent is a maneuver for

A descending as rapidly as possible to a lower altitude or to the ground
B descending at best glide speed to cover the greatest distance to a landing site
C descending slowly while the pilot troubleshoots the problem

QUESTION 2 · WT-002 · PA.IX.A.K2 [ ] flag

When an emergency descent is started, a bank of approximately 30 to 45 degrees is established mainly to

A keep the engine from cooling too quickly
B keep positive load factors (G) on the airplane
C lower the stall speed

QUESTION 3 · WT-003 · PA.IX.A.K3 [ ] flag

During an emergency descent with the flaps extended as the manufacturer recommends, the pilot must not let the airspeed pass

A VY, the best rate-of-climb speed
B VFE, the maximum flap extended speed
C VS0, the stall speed in the landing configuration

QUESTION 4 · WT-004 · PA.IX.A.K3 [ ] flag

If an emergency descent must be made in turbulent air, the pilot must also comply with

A the best angle-of-climb speed (VX)
B the stall speed in the clean configuration (VS1)
C the design maneuvering speed (VA) limitation

QUESTION 5 · WT-005 · PA.IX.A.K2 [ ] flag

Unless the manufacturer prohibits it, the power is reduced to idle and the propeller control (if equipped) is set to low pitch, high rpm, during an emergency descent. Why?

A It cools the cylinders as fast as possible so the engine is ready for a restart
B It keeps the vacuum pump at full output
C The propeller acts as an aerodynamic brake against excess airspeed

QUESTION 6 · WT-006 · PA.IX.A.K3 [ ] flag

During an emergency descent for an engine fire, a high-speed descent could blow out the fire. What does the AFH say weighs against flying as fast as possible?

A High speed makes the fuel selector ineffective

B Fire weakens the structure, so a lower airspeed means less stress

C High speed always feeds the fire more oxygen, so it can never put a fire out

QUESTION 7 · WT-007 · PA.IX.A.K3 [ ] flag

Within the procedure used, the AFH says an emergency descent should be flown at

A the maximum allowable airspeed consistent with the procedure

B the bottom of the green arc

C best glide speed

QUESTION 8 · WT-008 · PA.IX.A.K4 [ ] flag

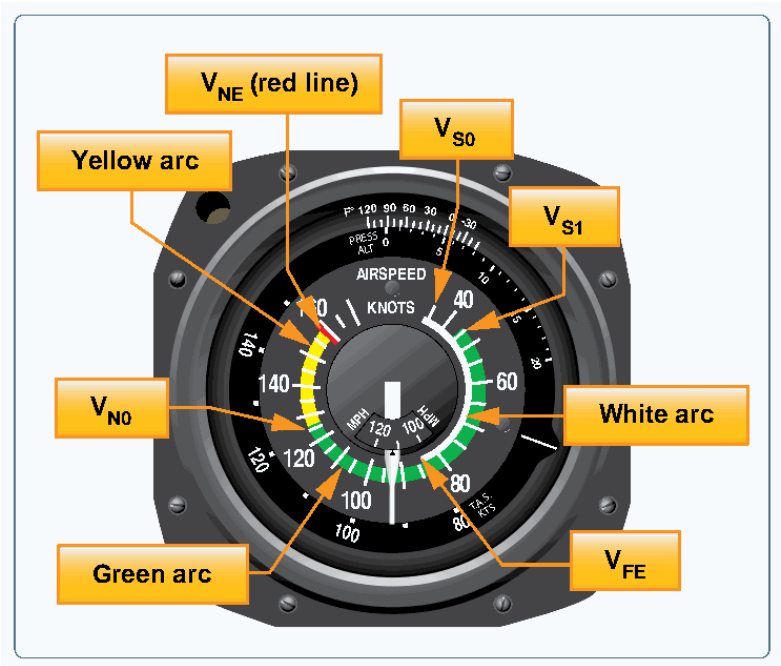
In airplanes with piston engines, prolonged practice of emergency descents should be avoided to prevent

A overheating of the brakes

B draining the battery

C excessive cooling of the engine cylinders

QUESTION 9 · WT-009 · PA.IX.A.K3 [ ] flag



An airspeed indicator with its standard markings. FAA figure: Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Figure 8-8, p. 8-9 (PDF p. 211). Public domain.

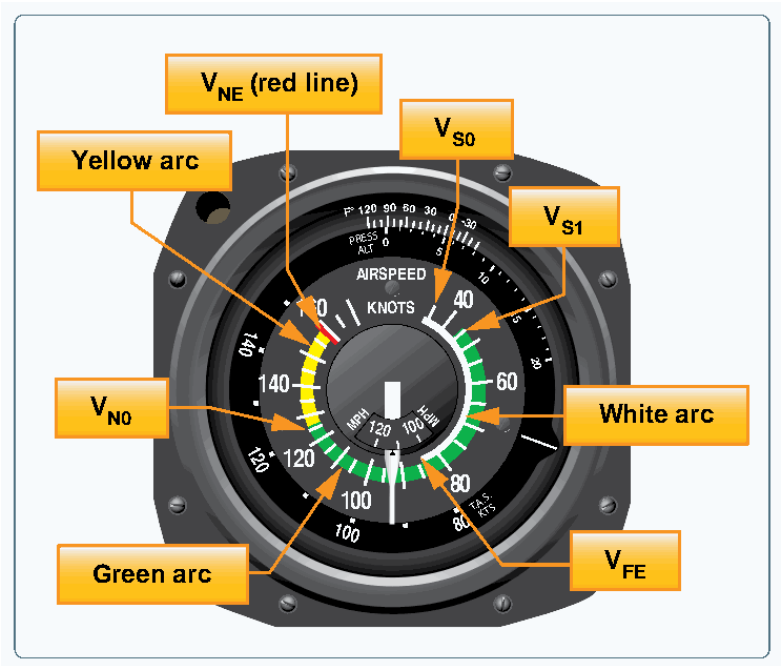
In smooth air, flaps up, which marking on this airspeed indicator is the speed the airplane must never pass during an emergency descent?

A The top of the green arc

B The red line

C The top of the white arc

QUESTION 10 · WT-010 · PA.IX.A.K3 [ ] flag



An airspeed indicator with its standard markings. FAA figure: Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Figure 8-8, p. 8-9 (PDF p. 211). Public domain.

Which of these airspeed limitations is NOT marked on this airspeed indicator?

A VNO, the maximum structural cruising speed

B VFE, the maximum flap extended speed

C VA, the design maneuvering speed

QUESTION 11 · WT-039 · PA.IX.A.R1 [ ] flag

Smoke fills the cabin at 6,500 feet over wooded hills. A flat valley with fields lies 3 miles to the west and a small airport 8 miles east; the wind is from the west. The ACS lists altitude, wind, terrain, obstructions, gliding distance, and available landing distance as the risk considerations for an emergency descent. The decision is to

A spiral down over the present position so that the airplane stays over the terrain you can see until the smoke clears

B turn toward the landing you can reach while descending: the valley fields to the west, into the wind, clear of the ridges, since the descent ends in a landing, not just at a lower altitude

C descend straight ahead at the maximum allowable airspeed; the purpose of the maneuver is to lose altitude, and the landing site is chosen after the descent is finished

QUESTION 12 · WT-040 · PA.IX.A.R3 [ ] flag

You are flying an airplane whose POH emergency descent procedure calls for flaps up at a high airspeed (the course airplane's 1978 Cessna 172N POH has no emergency descent procedure of its own). The air is turbulent. Under the ACS risk element "Configuring the airplane," the decision is to

A accept a brief excursion above VNE, since the structural limits carry a safety factor meant for emergencies

B extend full flaps regardless of airspeed, because drag is what makes an emergency descent fast and the flaps are built to take it

C fly the POH configuration, but hold the airspeed at or below VA for the turbulence, and never above VFE if flaps come out

SET B

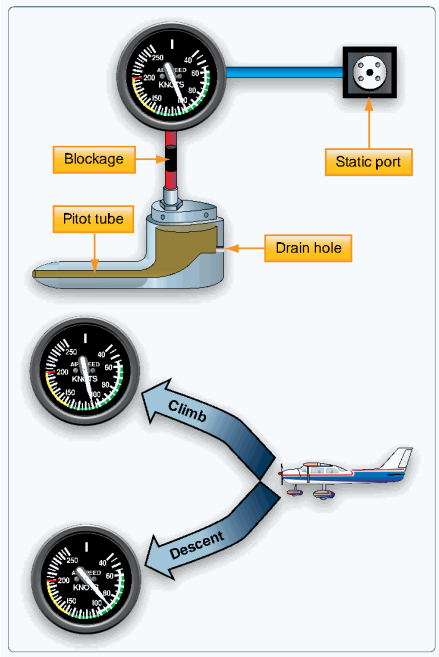
Flight instruments: how they work and how they fail (PA.VIII.C, PA.VI.A.K2)

QUESTION 13 · WT-011 · PA.VIII.C.K1a [ ] flag

The pitot tube becomes blocked by ice but its drain hole stays open. The airspeed indicator will

A freeze at the last reading
B drop to zero
C read higher as the airplane climbs

QUESTION 14 · WT-012 · PA.VIII.C.K1a [ ] flag



A blocked pitot system with a clear static system. FAA figure: Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Figure 8-10, p. 8-11 (PDF p. 213). Public domain.

The pitot tube and its drain hole are both blocked; the static port is clear. If the airplane climbs at a constant true airspeed, the airspeed indicator will show

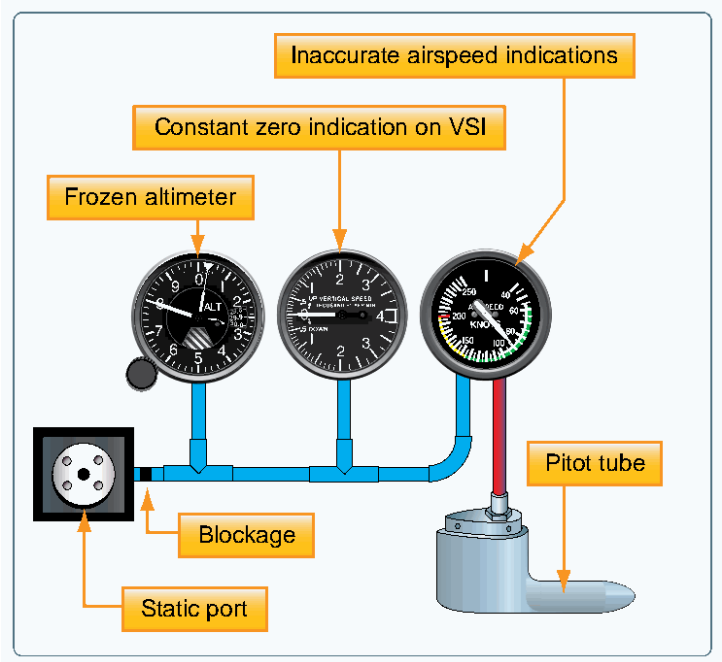
A no change
B a decrease
C an increase

QUESTION 15 · WT-013 · PA.VIII.C.K1a [ ] flag

A blocked static port affects which instruments?

A The altimeter, vertical speed indicator, and airspeed indicator
B The altimeter and vertical speed indicator, but not the airspeed indicator
C Only the airspeed indicator

QUESTION 16 · WT-014 · PA.VIII.C.K1a [ ] flag



A blocked static system. FAA figure: Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Figure 8-11, p. 8-12 (PDF p. 214). Public domain.

The static port ices over in cruise, then the pilot descends. The airspeed indicator will show

A faster than the actual airspeed
B slower than the actual airspeed
C the correct airspeed

QUESTION 17 · WT-015 · PA.VIII.C.K1a [ ] flag

When the alternate static source inside the cabin is used, the altimeter will normally indicate

A the actual altitude
B slightly lower than the actual altitude
C slightly higher than the actual altitude

QUESTION 18 · WT-016 · PA.VIII.C.K1c [ ] flag

A heading indicator with no automatic north-seeking capability should be checked against the magnetic compass about every

A 15 minutes, in straight-and-level flight at a constant speed
B hour, during the climb
C 15 minutes, during a standard-rate turn so the card can settle

QUESTION 19 · WT-017 · PA.VIII.C.K1c [ ] flag

The attitude indicator depends on which gyroscopic property?

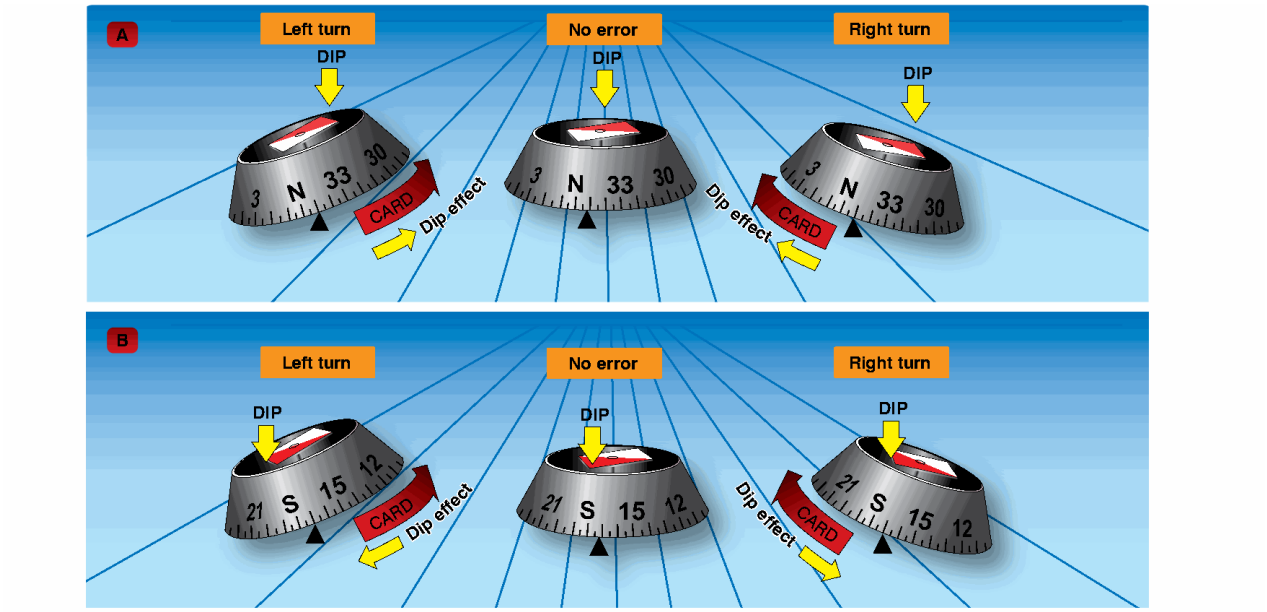
A Precession
B Rigidity in space
C Magnetic dip

QUESTION 20 · WT-018 · PA.VIII.C.K1c [ ] flag

The turn coordinator indicates

A the exact angle of bank
B the pitch attitude
C the rate of roll and the rate and direction of turn

QUESTION 21 · WT-019 · PA.VI.A.K2 [ ] flag



Northerly (A) and southerly (B) turning errors of the magnetic compass. FAA figure: Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Figure 8-36, p. 8-26 (PDF p. 228). Public domain.

In the Northern Hemisphere, when turning to a heading of north using only the magnetic compass, the pilot should roll out

A exactly as the compass reaches north
B before the compass reaches north
C after the compass passes north

QUESTION 22 · WT-020 · PA.VI.A.K2 [ ] flag

Using the rule of thumb in the Pilot's Handbook of Aeronautical Knowledge, near 40 degrees north latitude a turn to north should be stopped about how many degrees before the compass reaches north?

A 55 degrees
B 35 degrees
C 20 degrees

QUESTION 23 · WT-021 · PA.VI.A.K2 [ ] flag

In the Northern Hemisphere, accelerating on an easterly heading makes the magnetic compass indicate

A no change
B a turn toward south
C a turn toward north

QUESTION 24 · WT-022 · PA.VI.A.K2 [ ] flag

For (Magnetic)	N	30	60	E	120	150
Steer (Compass)	0	28	57	86	117	148
For (Magnetic	S	210	240	W	300	330
Steer (Compass)	180	212	243	274	303	332

A compass deviation card. FAA figure: Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Figure 16-12, p. 16-8 (PDF p. 395). Public domain.

Using this deviation card, to fly a magnetic heading of 240 degrees the pilot should steer a compass heading of

A 240 degrees

B 237 degrees

C 243 degrees

QUESTION 25 · WT-023 · PA.VI.A.K2 [ ] flag

Compass deviation is caused by

A the downward pull of the Earth's magnetic field near the poles

B magnetic fields within the airplane, from electrical current and magnetized parts

C the angle between true north and magnetic north, which changes with location across the country

SET C

Pilotage and dead reckoning, worked on a chart (PA.VI.A)

QUESTION 26 · WT-024 · PA.VI.A.K1 [ ] flag

Pilotage is navigation by

A computations of time, airspeed, distance, and direction
B reference to landmarks or checkpoints
C reference to radio aids only

QUESTION 27 · WT-025 · PA.VI.A.K1 [ ] flag

Dead reckoning is navigation

A by flying from one landmark to the next
B by following a GPS course
C solely by means of computations based on time, airspeed, distance, and direction

QUESTION 28 · WT-026 · PA.VI.A.K4c [ ] flag

On a sectional chart, a checkpoint one-half inch from your course line is about how far from your course on the ground?

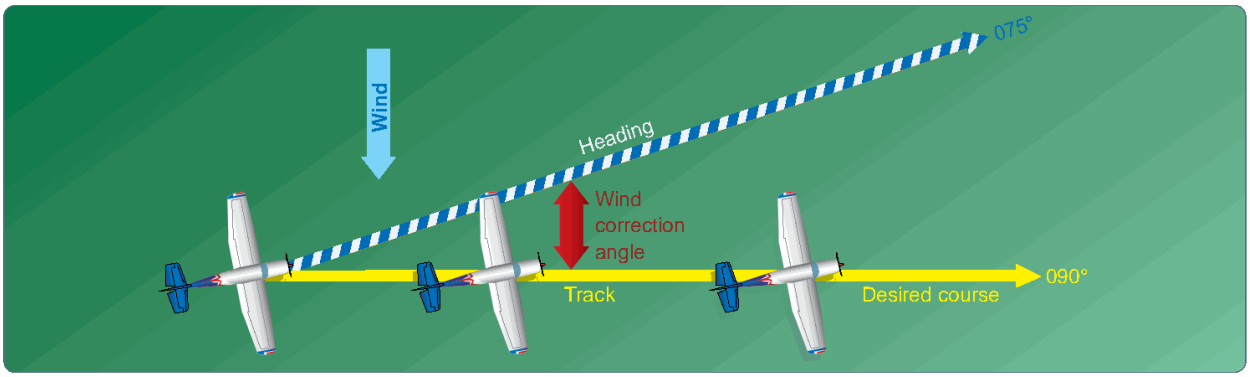
A 4 statute miles
B 1 statute mile
C 8 statute miles

QUESTION 29 · WT-027 · PA.VI.A.K5a [ ] flag

The variation is 9 degrees east. To fly a true course of 090 degrees, the magnetic course is

A 099 degrees
B 081 degrees
C 090 degrees

QUESTION 30 · WT-028 · PA.VI.A.K5b [ ] flag



A wind correction angle that counteracts drift. FAA figure: Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Figure 16-17, p. 16-11 (PDF p. 398). Public domain.

In this figure the wind is from the north and the desired course is 090 degrees. Why is the airplane heading 075 degrees?

A To correct for compass deviation

B To correct for magnetic variation

C To counteract the wind drifting it south of the course

QUESTION 31 · WT-029 · PA.VI.A.K1 [ ] flag

With no wind, which statement is true?

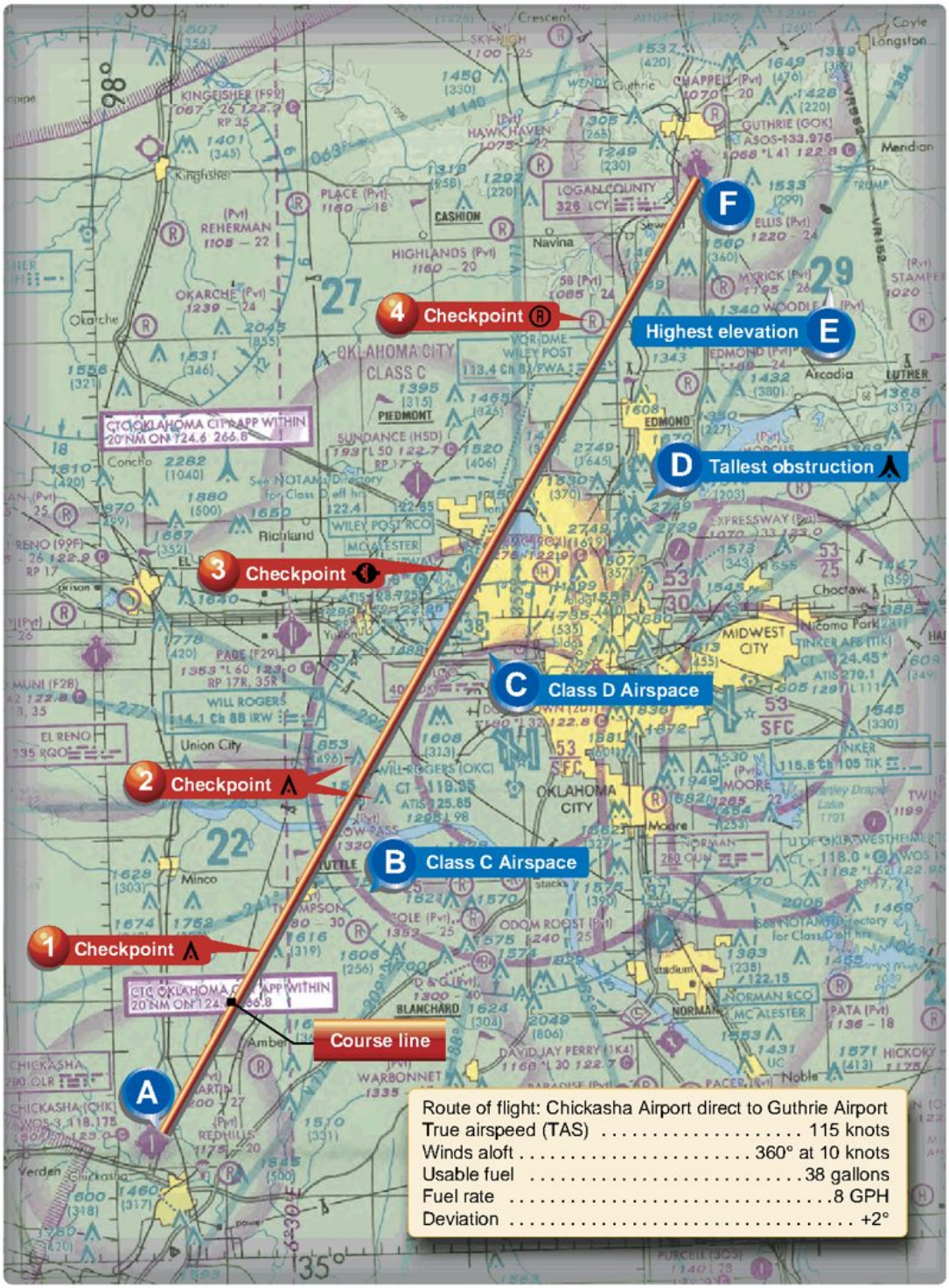
A Groundspeed equals true airspeed, and the track is the same as the heading

B A wind triangle is still needed to find the heading

C Groundspeed equals indicated airspeed, and the track is the same as the course

FIGURE FOR THE NEXT QUESTIONS

Chickasha to Guthrie, planned on a sectional



Sectional chart excerpt: Chickasha (A) direct to Guthrie (F). TAS 115 knots, wind 360 degrees at 10 knots, 38 gallons usable, 8 gallons per hour, deviation +2 degrees. FAA figure: Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Figure 16-25, p. 16-19 (PDF p. 406). Public domain. On the test the figure appears with each question; here it is printed once, full size.

QUESTION 32 · WT-030 · PA.VI.A.K5a [ ] flag

Use the sectional chart excerpt (Pilot's Handbook of Aeronautical Knowledge, Figure 16-25) printed before this group of questions.

The true course from Chickasha to Guthrie measures 031 degrees. With a wind correction angle of 3 degrees left, the true heading is

A 034 degrees
B 028 degrees
C 031 degrees

QUESTION 33 · WT-031 · PA.VI.A.K5a [ ] flag

Use the sectional chart excerpt (Pilot's Handbook of Aeronautical Knowledge, Figure 16-25) printed before this group of questions.

The handbook reads the variation on this chart as 6.30° E (its notation for 6 degrees 30 minutes), rounded to 7 degrees east. With a true heading of 028 degrees, the magnetic heading is

A 035 degrees
B 028 degrees
C 021 degrees

QUESTION 34 · WT-032 · PA.VI.A.K5a [ ] flag

Use the sectional chart excerpt (Pilot's Handbook of Aeronautical Knowledge, Figure 16-25) printed before this group of questions.

The deviation for this airplane is +2 degrees. With a magnetic heading of 021 degrees, the compass heading is

A 021 degrees
B 019 degrees
C 023 degrees

QUESTION 35 · WT-033 · PA.VI.A.K5c [ ] flag

Use the sectional chart excerpt (Pilot's Handbook of Aeronautical Knowledge, Figure 16-25) printed before this group of questions.

The trip is 53 nautical miles and the groundspeed is 106 knots. Not counting the climb, the time en route is about

A 30 minutes
B 35 minutes
C 50 minutes

QUESTION 36 · WT-034 · PA.I.D.K3c [ ] flag

Use the sectional chart excerpt (Pilot's Handbook of Aeronautical Knowledge, Figure 16-25) printed before this group of questions.

Including the climb, the flight takes 35 minutes at 8 gallons per hour. The fuel burned is about

A 2.8 gallons
B 4.7 gallons
C 8.0 gallons

QUESTION 37 · WT-035 · PA.I.E.K1 [ ] flag

Use the sectional chart excerpt (Pilot's Handbook of Aeronautical Knowledge, Figure 16-25) printed before this group of questions.

Where the course crosses point B, the Class C airspace around Will Rogers World Airport extends from

A 2,500 feet AGL to 4,000 feet AGL

B 2,500 feet MSL to 5,300 feet MSL

C the surface to 5,300 feet MSL

QUESTION 38 · WT-036 · PA.I.D.K2 [ ] flag

This flight is on a magnetic course between 000 and 179 degrees, more than 3,000 feet above the surface. Which VFR cruising altitude is correct?

A 6,500 feet MSL

B 5,500 feet MSL

C 5,000 feet MSL

QUESTION 39 · WT-037 · PA.VI.A.K4c [ ] flag

When choosing towns as checkpoints, the Pilot's Handbook of Aeronautical Knowledge recommends

A towns shown as splashes of yellow, not towns shown as small circles

B small circles, because they are easier to find

C any town, as long as it is on the course line

QUESTION 40 · WT-038 · PA.VI.A.K7 [ ] flag

You miss an expected checkpoint. The advice in the Pilot's Handbook of Aeronautical Knowledge is to

A turn toward the nearest town

B hold the heading and look for the next checkpoint

C circle until the checkpoint is found

QUESTION 41 · WT-041 · PA.VI.A.R1 [ ] flag

On the Chickasha to Guthrie leg you are head-down on the chart confirming a checkpoint while passing the edge of the Class C airspace, where traffic concentrates. The ACS names "Collision hazards" as a risk of pilotage and dead reckoning. The decision is to

A work the chart in short glances and keep the eyes outside most of the time, using the chart's airport symbols and airspace rings as cues to where other airplanes will be

B climb above the Class C ceiling so that the chart work can be done without traffic to watch for

C keep the head down until the checkpoint is confirmed, because collision avoidance near Class C airspace is the controller's job

QUESTION 42 · WT-042 · PA.VI.A.R3 [ ] flag

The 35 minutes planned for the Chickasha to Guthrie leg took 42 against a stronger headwind, and you flew it at a higher power setting than planned to make up time. The ACS lists "Unplanned fuel/power consumption" as a risk. The decision is to

A recompute fuel remaining from the time flown and the POH fuel flow at the power used; land for fuel if the reserve is in doubt

B lean the mixture aggressively for the rest of the flight so that the planned fuel lasts, then press on to the destination as filed

C trust the fuel quantity gauges, which the regulations require to read accurately at every fuel level, and continue as planned

ANSWER KEY

Answers, reasons, and where to read

No.	Key	Why, and where to read it
1	A	The AFH defines it as descending as rapidly as possible, without exceeding the airplane's structural limits, for an uncontrollable fire, a sudden loss of cabin pressure, or any situation that demands an immediate descent. Best glide is for distance, which is a different goal. Airplane Flying Handbook (FAA-H-8083-3C), Chapter 18, Emergency Procedures: Emergency Descents · PA.IX.A.K1 Read more: AFH 18-8 (PDF p. 357) https://www.faa.gov/sites/faa.gov/files/regulations_policies/handbooks_manuals/aviation/airplane_handbook/00_afh_full.pdf#page=357 · Syllabus p. 56
2	B	The AFH: "a bank of approximately 30 to 45 degrees should be established to maintain positive load factors (G forces) on the airplane." A turn also lets the pilot check for traffic below and look for a landing area. Bank raises stall speed; it does not lower it. Airplane Flying Handbook (FAA-H-8083-3C), Chapter 18, Emergency Procedures: Emergency Descents · PA.IX.A.K2 Read more: AFH 18-8 (PDF p. 357) https://www.faa.gov/sites/faa.gov/files/regulations_policies/handbooks_manuals/aviation/airplane_handbook/00_afh_full.pdf#page=357 · Syllabus p. 56
3	B	The AFH lists the limits: never past VNE, VLE, or VFE, as applicable. With flaps out, VFE is the ceiling. VY and VS0 are not limits on how fast the airplane may go. Airplane Flying Handbook (FAA-H-8083-3C), Chapter 18, Emergency Procedures: Emergency Descents; Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 8, Flight Instruments, Airspeed Indicator Markings · PA.IX.A.K3 Read more: AFH 18-8 (PDF p. 357) https://www.faa.gov/sites/faa.gov/files/regulations_policies/handbooks_manuals/aviation/airplane_handbook/00_afh_full.pdf#page=357 · Pilot's Handbook of Aeronautical Knowledge 8-9 (PDF p. 211) https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=211 · Syllabus p. 56
4	C	The AFH: "If the descent is conducted in turbulent conditions, the pilot also needs to comply with the design maneuvering speed (VA) limitations." VA is the speed at which a gust or full control deflection will not overstress the structure, and it is lower at lighter weights. Airplane Flying Handbook (FAA-H-8083-3C), Chapter 18, Emergency Procedures: Emergency Descents; Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 8, Flight Instruments, Other Airspeed Limitations · PA.IX.A.K3 Read more: AFH 18-8 (PDF p. 357) https://www.faa.gov/sites/faa.gov/files/regulations_policies/handbooks_manuals/aviation/airplane_handbook/00_afh_full.pdf#page=357 · Pilot's Handbook of Aeronautical Knowledge 8-9 (PDF p. 211) https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=211 · Syllabus p. 56
5	C	The AFH: this "allows the propeller to act as an aerodynamic brake to help prevent an excessive airspeed buildup during the descent." Rapid cooling is a hazard of the maneuver, not its purpose. Airplane Flying Handbook (FAA-H-8083-3C), Chapter 18, Emergency Procedures: Emergency Descents · PA.IX.A.K2 Read more: AFH 18-8 (PDF p. 357) https://www.faa.gov/sites/faa.gov/files/regulations_policies/handbooks_manuals/aviation/airplane_handbook/00_afh_full.pdf#page=357 · Syllabus p. 56
6	B	The AFH: "the weakening of the airplane structure is a major concern and descent at low airspeed would place less stress on the airplane." Follow the POH procedure for the airplane you fly. Airplane Flying Handbook (FAA-H-8083-3C), Chapter 18, Emergency Procedures: Emergency Descents · PA.IX.A.K3 Read more: AFH 18-8 (PDF p. 357) https://www.faa.gov/sites/faa.gov/files/regulations_policies/handbooks_manuals/aviation/airplane_handbook/00_afh_full.pdf#page=357 · Syllabus p. 56
7	A	"The descent should be made at the maximum allowable airspeed consistent with the procedure used. This provides increased drag and a high rate of descent." Maximum allowable means the limits in WT-003 and WT-004 still apply. Airplane Flying Handbook (FAA-H-8083-3C), Chapter 18, Emergency Procedures: Emergency Descents · PA.IX.A.K3 Read more: AFH 18-8 (PDF p. 357) https://www.faa.gov/sites/faa.gov/files/regulations_policies/handbooks_manuals/aviation/airplane_handbook/00_afh_full.pdf#page=357 · Syllabus p. 56

No.	Key	Why, and where to read it
8	C	The AFH: once the descent is established and stabilized in training, end it; prolonged practice risks "excessive cooling of the engine cylinders." Airplane Flying Handbook (FAA-H-8083-3C), Chapter 18, Emergency Procedures: Emergency Descents · PA.IX.A.K4 Read more: AFH 18-8 (PDF p. 357) https://www.faa.gov/sites/faa.gov/files/regulations_policies/handbooks_manuals/aviation/airplane_handbook/00_afh_full.pdf#page=357 · Syllabus p. 56
9	B	The red line is VNE, never exceed. The top of the white arc is VFE, which matters only with flaps out. The top of the green arc is VNO; the yellow arc above it may be used in smooth air, with caution. Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 8, Flight Instruments, Airspeed Indicator Markings (Figure 8-8) · PA.IX.A.K3 Read more: Pilot's Handbook of Aeronautical Knowledge 8-9 (PDF p. 211) https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=211 · Syllabus p. 56
10	C	VA is found on placards and in the POH, not on the indicator, and it changes with weight: lower when the airplane is light. VFE is the top of the white arc and VNO the top of the green arc. In a turbulent emergency descent, VA is the limit you cannot read off the dial. Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 8, Flight Instruments, Airspeed Indicator Markings and Other Airspeed Limitations · PA.IX.A.K3 Read more: Pilot's Handbook of Aeronautical Knowledge 8-9 (PDF p. 211) https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=211 · Syllabus p. 26
11	B	The handbook defines the emergency descent as descending as rapidly as possible to a lower altitude or to the ground for an emergency landing, and that last phrase is the point: with a fire or smoke the descent and the forced landing are one maneuver. Eight miles to the airport at a steep descent angle may be more distance than the descent covers; the valley is three miles, into the wind, with no ridge to clear. The risk element asks the pilot to think about where the descent ends while starting it. Airplane Flying Handbook (FAA-H-8083-3C), Chapter 18, Emergency Procedures: Emergency Descents, 18-8; Private Pilot for Airplane Category ACS (FAA-S-ACS-6C) PA.IX.A.R1 · PA.IX.A.R1 Read more: AFH 18-8 (PDF p. 357) https://www.faa.gov/sites/faa.gov/files/regulations_policies/handbooks_manuals/aviation/airplane_handbook/00_afh_full.pdf#page=357 · ACS 6C p. 51 (PDF p. 59) https://www.faa.gov/training_testing/testing/acs/private_airplane_acs_6.pdf#page=59 · Syllabus p. 56
12	C	The handbook says the procedure in the AFM/POH is used, that the airspeed must not exceed VNE, VLE, or VFE as applicable, and that in turbulent air the pilot must also comply with the design maneuvering speed. Flaps add drag only inside their speed limit; above VFE they add a structural problem to the emergency. The red line is a limit, not a target, and there is no emergency allowance above it. Airplane Flying Handbook (FAA-H-8083-3C), Chapter 18, Emergency Procedures: Emergency Descents, 18-8; Private Pilot for Airplane Category ACS (FAA-S-ACS-6C) PA.IX.A.R3 · PA.IX.A.R3 Read more: AFH 18-8 (PDF p. 357) https://www.faa.gov/sites/faa.gov/files/regulations_policies/handbooks_manuals/aviation/airplane_handbook/00_afh_full.pdf#page=357 · ACS 6C p. 51 (PDF p. 59) https://www.faa.gov/training_testing/testing/acs/private_airplane_acs_6.pdf#page=59 · Syllabus p. 56
13	B	With the drain hole open, the trapped ram air vents out and the pressure falls to the outside static pressure. The indicator sees no difference between ram and static pressure and reads zero, usually quickly. Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 8, Flight Instruments, Blocked Pitot System (Figure 8-9) · PA.VIII.C.K1a Read more: Pilot's Handbook of Aeronautical Knowledge 8-10 (PDF p. 212) https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=212 · Syllabus p. 26
14	C	The pressure trapped in the pitot line stays the same while the static pressure around the diaphragm falls in the climb, so the diaphragm expands and the needle shows more airspeed. In a descent it shows less. The indicator now behaves like an altimeter. Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 8, Flight Instruments, Blocked Pitot System (Figure 8-10) · PA.VIII.C.K1a Read more: Pilot's Handbook of Aeronautical Knowledge 8-11 (PDF p. 213) https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=213 · Syllabus p. 26

No.	Key	Why, and where to read it
15	A	All three pitot-static instruments use static pressure. A blocked pitot tube affects only the airspeed indicator; a blocked static port affects all three: the altimeter freezes, the VSI reads zero, and the airspeed reading becomes inaccurate. **Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 8, Flight Instruments, Blockage of the Pitot-Static System and Blocked Static System · PA.VIII.C.K1a** **Read more: Pilot's Handbook of Aeronautical Knowledge 8-11 (PDF p. 213)** **https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=213 · Syllabus p. 26**
16	A	The static side holds the lower pressure of the higher altitude. Below that altitude the indicator reads faster than actual; above it, slower. The altimeter stays frozen at the altitude where the port blocked. **Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 8, Flight Instruments, Blocked Static System (Figure 8-11) · PA.VIII.C.K1a** **Read more: Pilot's Handbook of Aeronautical Knowledge 8-12 (PDF p. 214)** **https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=214 · Syllabus p. 26**
17	C	Air flowing around the fuselage lowers the pressure inside the cabin. Lower static pressure reads as higher altitude, and the airspeed indicator also reads higher than actual. **Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 8, Flight Instruments, Blocked Static System (alternate static source) · PA.VIII.C.K1a** **Read more: Pilot's Handbook of Aeronautical Knowledge 8-2 (PDF p. 204)** **https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=204 · Syllabus p. 26**
18	A	Free gyros precess and drift. The Pilot's Handbook of Aeronautical Knowledge says check and reset about every 15 minutes, and do it straight and level at a constant speed so the compass's own turning and acceleration errors are not copied into the gyro. **Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 8, Flight Instruments, Heading Indicator · PA.VIII.C.K1c** **Read more: Pilot's Handbook of Aeronautical Knowledge 8-13 (PDF p. 215)** **https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=215 · Syllabus p. 26**
19	B	The attitude indicator's gyro spins in the horizontal plane and resists being moved, so the airplane rotates around it and the horizon bar stays level with the real horizon. The turn coordinator uses precession. Dip is a compass effect. **Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 8, Flight Instruments, Attitude Indicator · PA.VIII.C.K1c** **Read more: Pilot's Handbook of Aeronautical Knowledge 8-12 (PDF p. 214)** **https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=214 · Syllabus p. 26**
20	C	Its gimbal is canted, so it senses rate of roll and rate of turn. Lining the miniature airplane up with the index gives a standard-rate turn, 3 degrees per second. The Pilot's Handbook of Aeronautical Knowledge: it "does not display a specific angle of bank." **Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 8, Flight Instruments, Turn Coordinator · PA.VIII.C.K1c** **Read more: Pilot's Handbook of Aeronautical Knowledge 8-17 (PDF p. 219)** **https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=219 · Syllabus p. 26**
21	B	Turning toward north, magnetic dip makes the compass card (the float assembly) lead, so stop the turn before the compass shows north. Turning toward south, the card lags, so let it pass south before rolling out. That is the wording in the Pilot's Handbook of Aeronautical Knowledge; the flight deck rule of thumb says the same thing from the indication's side, UNOS: undershoot north, overshoot south. The error grows nearer the magnetic poles. **Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 8, Flight Instruments, Northerly and Southerly Turning Errors, page 8-26 (Figure 8-36) · PA.VI.A.K2** **Read more: Pilot's Handbook of Aeronautical Knowledge 8-26 (PDF p. 228)** **https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=228 · Syllabus p. 59**

No.	Key	Why, and where to read it
22	B	The rule of thumb in the Pilot's Handbook of Aeronautical Knowledge (Chapter 8, Northerly Turning Errors): stop the turn 15 degrees plus half of the latitude before the heading, so at 40 degrees north, 15 + 20 = 35 degrees. Near 30 degrees latitude it would be 30 degrees. Other books teach "about the latitude"; this question asks for the rule in the Pilot's Handbook of Aeronautical Knowledge. **Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 8, Flight Instruments, Northerly Turning Errors · PA.VI.A.K2** **Read more: Pilot's Handbook of Aeronautical Knowledge 8-26 (PDF p. 228)** **https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=228 · Syllabus p. 59**
23	C	ANDS: Accelerate, North; Decelerate, South. The error shows on easterly and westerly headings because of how the card is mounted. **Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 8, Flight Instruments, Acceleration Error (Figure 8-37) · PA.VI.A.K2** **Read more: Pilot's Handbook of Aeronautical Knowledge 8-27 (PDF p. 229)** **https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=229 · Syllabus p. 59**
24	C	Read the card: For (magnetic) 240, Steer (compass) 243. The card is the correction for this airplane's own magnetic fields at each heading. **Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 16, Navigation, Deviation (Figure 16-12) · PA.VI.A.K2** **Read more: Pilot's Handbook of Aeronautical Knowledge 16-8 (PDF p. 395)** **https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=395 · Syllabus p. 75**
25	B	Deviation comes from the airplane itself and changes with heading, not with location. The angle between true and magnetic north is variation. The downward pull is dip, which causes the turning errors. **Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 8, Flight Instruments, Deviation · PA.VI.A.K2** **Read more: Pilot's Handbook of Aeronautical Knowledge 8-24 (PDF p. 226)** **https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=226 · Syllabus p. 75**
26	B	Pilotage uses what you see outside. Computing heading and groundspeed from time, airspeed, distance, and direction is dead reckoning. On most cross-countries the two are used together. **Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 16, Navigation, Pilotage · PA.VI.A.K1** **Read more: Pilot's Handbook of Aeronautical Knowledge 16-12 (PDF p. 399)** **https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=399 · Syllabus p. 75**
27	C	The products of dead reckoning, adjusted for wind, are heading and groundspeed. Except over water, it is normally used with pilotage, which checks and corrects it at each checkpoint. **Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 16, Navigation, Dead Reckoning · PA.VI.A.K1** **Read more: Pilot's Handbook of Aeronautical Knowledge 16-13 (PDF p. 400)** **https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=400 · Syllabus p. 75**
28	A	The sectional scale is 1 inch = 8 statute miles (6.86 nautical miles), so half an inch is about 4 statute miles, or 3.43 nautical miles. **Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 16, Navigation, Pilotage · PA.VI.A.K4c** **Read more: Pilot's Handbook of Aeronautical Knowledge 16-12 (PDF p. 399)** **https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=399 · Syllabus p. 73**
29	B	East is least, west is best: subtract east variation, add west. 090 - 9 = 081. **Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 16, Navigation, Variation · PA.VI.A.K5a** **Read more: Pilot's Handbook of Aeronautical Knowledge 16-6 (PDF p. 393)** **https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=393 · Syllabus p. 75**

No.	Key	Why, and where to read it
30	**C**	The wind blows the airplane off course, so it points into the wind by the wind correction angle and the track stays on the desired course. **Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 16, Navigation, Effect of Wind (Figure 16-17) · PA.VI.A.K5b** **Read more: Pilot's Handbook of Aeronautical Knowledge 16-11 (PDF p. 398)** **https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=398 · Syllabus p. 75**
31	**A**	The Pilot's Handbook of Aeronautical Knowledge: "If there is no wind, the aircraft's ground track is the same as the heading and the GS is the same as the true airspeed." Wind is what makes the wind triangle necessary. **Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 16, Navigation, Wind Triangle or Vector Analysis · PA.VI.A.K1** **Read more: Pilot's Handbook of Aeronautical Knowledge 16-13 (PDF p. 400)** **https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=400 · Syllabus p. 75**
32	**B**	Left wind correction is subtracted, right is added: 031 - 3 = 028. The order is TC +/- WCA = TH +/- variation = MH +/- deviation = CH. **Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 16, Navigation, Steps in Charting the Course (Figures 16-25 and 16-26) · PA.VI.A.K5a** **Read more: Pilot's Handbook of Aeronautical Knowledge 16-19 (PDF p. 406)** **https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=406 · Syllabus p. 75**
33	**C**	East is least: 028 - 7 = 021. **Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 16, Navigation, Steps in Charting the Course (Figure 16-25) · PA.VI.A.K5a** **Read more: Pilot's Handbook of Aeronautical Knowledge 16-19 (PDF p. 406)** **https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=406 · Syllabus p. 75**
34	**C**	Apply the deviation as given: 021 + 2 = 023. That is the number the pilot steers by on the compass. **Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 16, Navigation, Steps in Charting the Course (Figures 16-25 and 16-26) · PA.VI.A.K5a** **Read more: Pilot's Handbook of Aeronautical Knowledge 16-19 (PDF p. 406)** **https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=406 · Syllabus p. 75**
35	**A**	53 / 106 = 0.5 hours, 30 minutes. The Pilot's Handbook of Aeronautical Knowledge adds 5 minutes for the climb, for 35 minutes total, which is why the question says not counting the climb. Read every word of the stem. **Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 16, Navigation, Steps in Charting the Course · PA.VI.A.K5c** **Read more: Pilot's Handbook of Aeronautical Knowledge 16-18 (PDF p. 405)** **https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=405 · Syllabus p. 75**
36	**B**	35 / 60 x 8 = 4.67, about 4.7 gallons. Reserve requirements come on top of trip fuel (14 CFR 91.151). **Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 16, Navigation, Steps in Charting the Course · PA.I.D.K3c** **Read more: Pilot's Handbook of Aeronautical Knowledge 16-18 (PDF p. 405)** **https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=405 · Syllabus p. 75**
37	**B**	The Pilot's Handbook of Aeronautical Knowledge gives this shelf as floor 2,500 feet MSL, ceiling 5,300 feet MSL. Class C shelves are charted ceiling over floor in hundreds of feet MSL (53 over 25); the inner surface area is charted with SFC as its floor. **Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 16, Navigation, Steps in Charting the Course (Figure 16-25) · PA.I.E.K1** **Read more: Pilot's Handbook of Aeronautical Knowledge 16-19 (PDF p. 406)** **https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=406 · Syllabus p. 73**

No.	Key	Why, and where to read it
38	**B**	14 CFR 91.159: on a magnetic course of 0 through 179 degrees, odd thousands plus 500 feet; 180 through 359, even thousands plus 500. The Pilot's Handbook of Aeronautical Knowledge picks 5,500 feet for this trip, which also clears the Class C and Class D airspace. **14 CFR 91.159(a); Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 16, Navigation, Steps in Charting the Course · PA.I.D.K2** **Read more: Pilot's Handbook of Aeronautical Knowledge 16-18 (PDF p. 405) https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=405 · 14 CFR 91.159 https://www.ecfr.gov/current/title-14/section-91.159 · Syllabus p. 75**
39	**A**	A small circle may turn out to be only a few houses. In isolated areas a small town can still be a good checkpoint. Bracket the course with features such as highways, rivers, and railroads. **Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 16, Navigation, Steps in Charting the Course and Pilotage · PA.VI.A.K4c** **Read more: Pilot's Handbook of Aeronautical Knowledge 16-18 (PDF p. 405) https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=405 · Syllabus p. 75**
40	**B**	"If one is missed, look for the next one while maintaining the heading." "If confused, hold the heading." Wandering makes a small error a large one. **Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 16, Navigation, Pilotage · PA.VI.A.K7** **Read more: Pilot's Handbook of Aeronautical Knowledge 16-12 (PDF p. 399) https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=399 · Syllabus p. 75**
41	**A**	The handbook's collision-avoidance guidance is to scan outside in a regular pattern and to limit the time spent looking inside; pilotage adds the trick of reading the chart in glances, between scans, with a finger on the position. A chart also tells you where to look: airports, airspace rings, and training areas are where traffic clusters. Flight following helps, but see-and-avoid never transfers to the controller, and a climb above the ceiling is a climb into the arrival stream. **Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 14, Airport Operations (Collision Avoidance; Scanning Techniques for Traffic Avoidance), 14-28; Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 16, Navigation, Pilotage, 16-12; Private Pilot for Airplane Category ACS (FAA-S-ACS-6C) PA.VI.A.R1 · PA.VI.A.R1** **Read more: Pilot's Handbook of Aeronautical Knowledge 14-28 (PDF p. 362) https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=362 · ACS 6C p. 38 (PDF p. 46) https://www.faa.gov/training_testing/testing/acs/private_airplane_acs_6.pdf#page=46 · Syllabus p. 75**
42	**A**	The handbook computes fuel from time and the rate of consumption, and warns that the rate depends on the power setting and altitude; more power and more minutes both mean less fuel than the plan said. The 30-minute day reserve of 91.151 is a floor. Leaning cannot recover fuel already burned, and the gauges in a light airplane are not the fuel plan. The risk element asks for the recalculation when the plan and the flight part company (PA.VI.A.R3). **Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C), Chapter 16, Navigation, Fuel Consumption, 16-11; 14 CFR 91.151(a); Private Pilot for Airplane Category ACS (FAA-S-ACS-6C) PA.VI.A.R3 · PA.VI.A.R3** **Read more: Pilot's Handbook of Aeronautical Knowledge 16-11 (PDF p. 398) https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/faa-h-8083-25c.pdf#page=398 · 14 CFR 91.151 https://www.ecfr.gov/current/title-14/section-91.151 · Syllabus p. 75**

SOURCES

Where every fact comes from

Checked on October 26, 2026. Test rules and numbers change: if anything here disagrees with the FAA or PSI on the day you test, the FAA and PSI win.

Revision log. November 7, 2026: November 2026 edition; the endorsement bar is now the syllabus's 80-percent rule (two practice tests at 80 percent or better, then 80 on the course final, and the review call); the Pilot's Handbook of Aeronautical Knowledge is named in full; the drill keys are spread across A, B and C, and the book prints the options in the same order as the practice page; the cover states that Pilot Career Solutions teaches in ground and simulator settings only. October 26, 2026: dead links replaced with the live FAA addresses; the unscored validation questions and the on-screen figures attributed to the FAA's own advisories; a Read more line (book, folio, PDF page, link) under every answer; four risk-scenario drills added; "checked on" wording throughout.

Source	Where
FAA: ACS Knowledge Test Table, allotted times (Oct 2024): PAR, 60 questions, 2.0 hours, passing score 70	faa.gov/training_testing/testing/acs/acs_knowledge_test_table.pdf
FAA: Airman Testing Community Advisory, September 2026 Special Edition (figures embedded in questions; PSI portal)	faa.gov/training_testing/testing/September_2026_Special_Edition.pdf
FAA: Airman Testing Community Advisory, February 2026 (embedded images; PSI sample questions)	faa.gov/training_testing/testing/Community_Advisory_February_2026.pdf
FAA: Frequently Missed Knowledge Test ACS Codes, 3rd Quarter CY24 and 2nd Quarter CY25 (percentages checked on October 26, 2026)	faa.gov/data_research/aviation_data_statistics/test_statistics
FAA: Airman Certification Standards Companion Guide for Pilots, FAA-G-ACS-2 (Section 2, p. 5: what the knowledge test report is and how the evaluator uses it)	faa.gov/training_testing/testing/acs/acs_companion_guide_pilots.pdf
Private Pilot for Airplane Category ACS, FAA-S-ACS-6C, Introduction and Appendix 1	faa.gov/training_testing/testing/acs
14 CFR 61.35 (knowledge test prerequisites), 61.39 (24 calendar months), 61.49 (retesting), 91.159 (VFR cruising altitudes)	ecfr.gov
Pilot's Handbook of Aeronautical Knowledge, FAA-H-8083-25C, Chapters 8 and 16	faa.gov
Airplane Flying Handbook, FAA-H-8083-3C, Chapter 18	faa.gov
AC 60-11C (April 26, 1999), Test Aids and Materials That May Be Used by Airman Knowledge Testing Applicants; the Companion Guide table on p. 4 is the current restatement	faa.gov/documentLibrary/media/Advisory_Circular/AC%2060-11C.pdf
AC 61-65K (November 14, 2025), Certification: Pilots and Flight and Ground Instructors, endorsements A.2 and A.36	faa.gov/documentLibrary/media/Advisory_Circular/AC_61-65K.pdf
PSI, the FAA testing vendor: sample tests for registered users; the FAA does not release the questions on the test (Companion Guide p. 3; Airman Testing Community Advisory, February 2026)	faa.psiexams.com
Pilot Career Solutions: the whole question bank, free, with the reason and the page to read after every answer	pilotcareersolutions.com/practice
Sporty's: free online practice tests (Study Buddy)	sportys.com/pilotshop/study
FAA: Airman Testing Community Advisory, February 28, 2023 (five unscored validation questions; the private test shows 65 questions, 60 scored) and Airman Knowledge Testing Matrix, September 25, 2026	faa.gov/training_testing/testing

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