

**GACE Flying Club Aircraft Review Test 2024
N5312S & N5928E**

Name: _____ GACE #: _____ Score: _____

Checked by: _____ CFI #: _____ Date: _____

(All N5928E questions will be marked **28E**)

GENERAL SECTION 1:

1. Total Usable Fuel Each Tank? _____
2. Total Oil Capacity? _____
3. Maximum Ramp Weight Normal Category? _____
4. Maximum Weight in Baggage Area 2? _____

LIMITATIONS SECTION 2:

1. Vfe – Maximum flap Extended Speed 10 degrees? _____
2. Va – Maneuvering Speed at 2200lbs? _____
3. Maximum Window Open Speed? _____
4. Yellow Arc Speed? _____
5. Minimum Oil Pressure? _____
6. Maximum Takeoff Weight? _____
7. Maximum Weight Capacity for Baggage Areas? _____
8. Recommended Entry Speed for Steep Turns? _____
9. Abrupt use of the controls is prohibited above what speed? _____
10. Operation on either LEFT or RIGHT tank is limited to? _____

EMERGENCY PROCEDURES SECTION 3:

1. Maximum Glide Speed? _____
2. Engine Failure during takeoff roll (first two actions)? _____
3. Engine Failure airspeed immediately after takeoff (without runway available)?

4. Electrical Fire in Flight (first three actions)? _____

5. **28E:** How is carburetor ice detected and cleared?

6. **28E:** A sudden engine roughness or misfiring is usually evidence of?

7. Landing with a flat nose tire (list all actions):

8. At 6,000 feet how far will you glide in nautical miles: (9 to 1 rule)? _____

9. Landing without elevator control procedure?

10. Executing a 180 degree turn in clouds procedure?

11. Should an inadvertent spin occur, the following recovery procedure should be used.

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____
- f. _____

NORMAL PROCEDURES SECTION 4:

1. Starting Engine:

- a. Should the engine tend to die after starting, turn on the _____ temporarily and adjust the throttle and/or mixture as necessary.
- b. In the event of over priming or flooding, turn off the auxiliary fuel pump and _____ and continue cranking with the mixture lean.

2. Taxiing:

- a. When taxiing, it is important that speed and use of brakes be held to a _____.
- b. Taxiing over loose gravel or cinders should be done at _____

3. Takeoff:
 - a. Any sign of rough engine operation or sluggish engine acceleration is good cause for discontinuing the takeoff. The engine should run smoothly and turn approximately _____ RPM.

4. Wing Flap Setting:
 - a. Flap deflections greater than _____ are not approved for takeoff

5. Cruise: The recommended setting using an EGT indicator is? _____

6. Landing **12S & 28E**:
 - a. Steep slips should be avoided with flap settings greater than _____ due to a slight tendency for the elevator to oscillate under certain combinations of airspeed, sideslip angle, and center of gravity loadings
 - b. _____ should be applied prior to any significant reduction or closing of the throttle
 - c. When landing in a strong crosswind use the _____ flap setting for the field length
 - d. In a balked landing climb, reduce the flap setting to _____ immediately after full power is applied. If obstacles must be cleared during the go around , reduce the wing flap setting to _____ and maintain a safe airspeed.

7. Cold Weather Operations:
 - a. Special consideration should be given to the operation of the airplane _____ during the winter season. Proper preflight _____ is especially important and will eliminate any free water accumulation
 - b. Use caution to prevent _____ of the airplane during starting when parked on snow or ice

WEIGHT & BALANCE SECTION 6: Create your own WB to take off at MAX GROSS WT. for a flight from Danbury, CT to Chester, CT.

ITEM DESCRIPTION	Weight	Arm	Moment/1000
1. Basic Empty Weight	1624.55	38.55	63.39
2. Usable Fuel			
3. Pilot & Passenger			
4. Rear Passengers			

5. Baggage Area 1			
6. Baggage Area 2			
7. Ramp Weight & Moment			
8. Fuel allowance for engine start, taxi and run up			
9. Takeoff Weight & Moment			
10. Center of Gravity			

1. List the required equipment (CFR 91.205b) that must be operational for Day VFR flight.
 - a. T
 - b. O
 - c. M
 - d. A
 - e. T
 - f. O
 - g. F
 - h. L
 - i. A
 - j. M
 - k. E
 - l. S

2. List the additional required equipment (CFR 91.205c) that must be operational for Night VFR flight.
 - a.
 - b.
 - c.
 - d.
 - e.

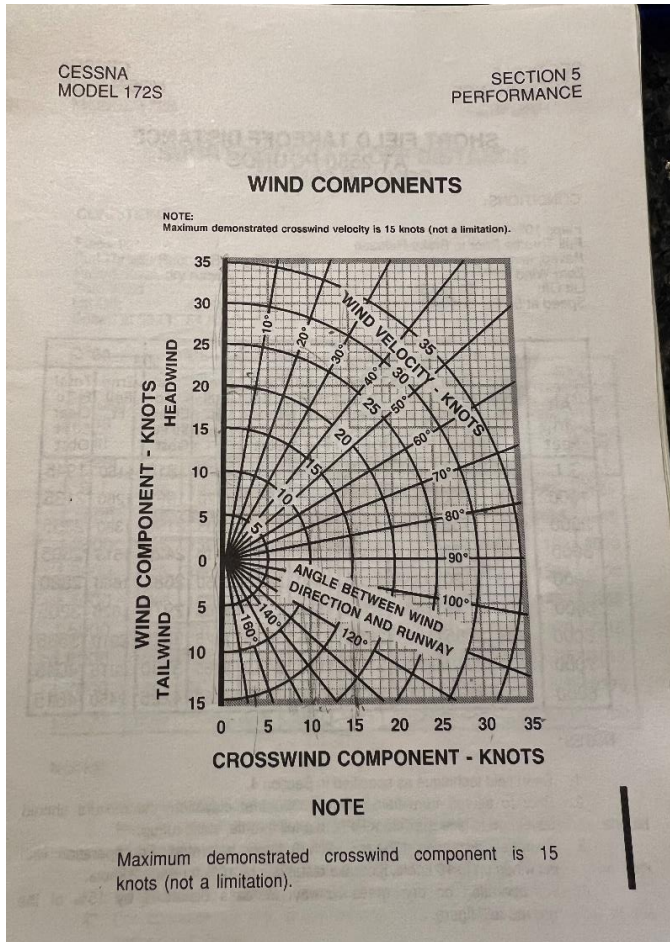
HANDLING, SERVICE & MAINTENANCE PROCEDURES (SECTION 8):

1. **28E:** List the recurring Airworthiness Directives for **N5928E**:

2. Do not apply pressure on the _____ or _____ when pushing on the tail cone:
3. The engine should not be operated with less than _____ of oil
4. What is the recommended nose wheel pressure? _____
5. What is the recommended main wheel pressure? _____
6. Do not set the _____ during cold weather.
7. **28E:** Do not operate on less than? _____ of oil

8. **28E:** What is the recommended nose wheel tire pressure: _____
 9. **28E** What is the recommended main wheel tire pressure: _____
 10. When you are pre-flighting the propeller what are you looking for: _____
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-

PERFORMANCE SECTION 5:



You are departing KDXR (Danbury, CT) on runway 08 for a flight to KSNC (Chester, CT) Weather at departure is reported as:

**KDXR 1953Z 03020KT 10SM
CLR 5/M10 A2992**

What is the X-Wind component for a departure off of runway 08?

**SHORT FIELD TAKEOFF DISTANCE
AT 2550 POUNDS**

CONDITIONS:

Flaps 10°
Full Throttle Prior to Brake Release
Paved, level, dry runway
Zero Wind
Lift Off: 51 KIAS
Speed at 50 Ft: 56 KIAS

Press Alt In Feet	0°C		10°C		20°C		30°C		40°C	
	Grnd Roll Ft	Total Ft To Clear 50 Ft Obst	Grnd Roll Ft	Total Ft To Clear 50 Ft Obst	Grnd Roll Ft	Total Ft To Clear 50 Ft Obst	Grnd Roll Ft	Total Ft To Clear 50 Ft Obst	Grnd Roll Ft	Total Ft To Clear 50 Ft Obst
S. L.	860	1465	925	1575	995	1690	1070	1810	1150	1945
1000	940	1600	1010	1720	1090	1850	1170	1990	1260	2135
2000	1025	1755	1110	1890	1195	2035	1285	2190	1380	2355
3000	1125	1925	1215	2080	1310	2240	1410	2420	1515	2605
4000	1235	2120	1335	2295	1440	2480	1550	2685	1660	2880
5000	1355	2345	1465	2545	1585	2755	1705	2975	1825	3205
6000	1495	2605	1615	2830	1745	3075	1875	3320	2010	3585
7000	1645	2910	1785	3170	1920	3440	2065	3730	2215	4045
8000	1820	3265	1970	3575	2120	3880	2280	4225	2450	4615

NOTES:

- Short field technique as specified in Section 4.
- Prior to takeoff from fields above 3000 feet elevation, the mixture should be leaned to give maximum RPM in a full throttle, static runup.
- Decrease distances 10% for each 9 knots headwind. For operation with tail winds up to 10 knots, increase distances by 10% for each 2 knots.
- For operation on dry, grass runway, increase distances by 15% of the "ground roll" figure.

Figure 5-5. Short Field Takeoff Distance (Sheet 1 of 3)

You are departing KDXR (Danbury, CT) on runway 08 for a flight to KSNC (Chester, CT) Weather at departure is reported:

**KDXR 1953Z 03020KT 10SM
CLR 5/M10 A2992**

- Calculate the ground roll:
- How many feet would you need to clear a 50ft obstacle?
- How many feet would you need to clear a 100ft obstacle?

CESSNA
MODEL 172S

SECTION 5
PERFORMANCE

CRUISE PERFORMANCE

CONDITIONS:

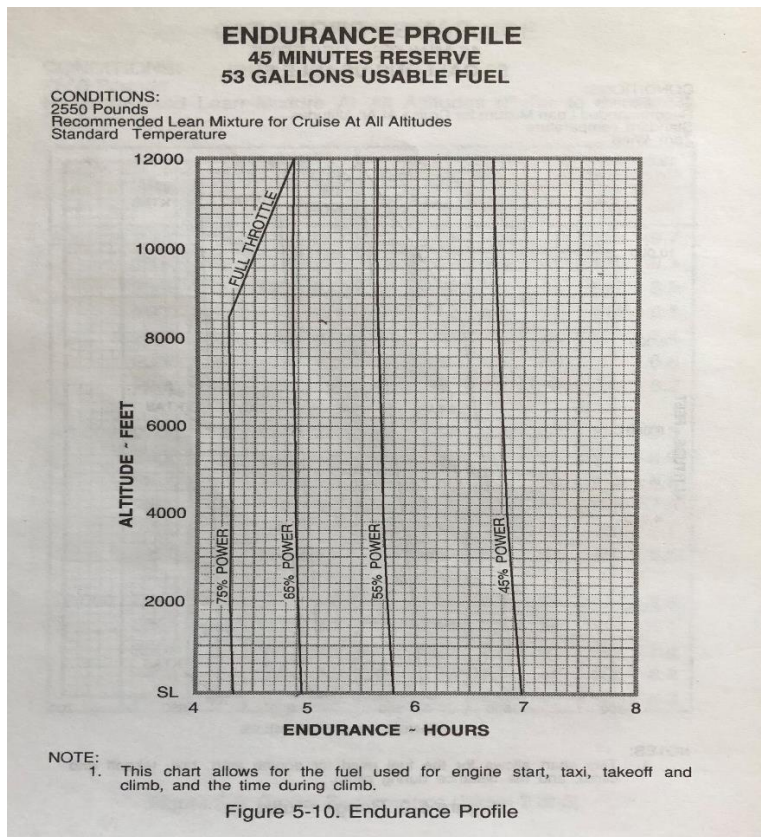
2550 Pounds
Recommended Lean Mixture At All Altitudes (Refer to Section 4, Cruise)

PRESS ALT FT	RPM	20°C BELOW STANDARD TEMP			STANDARD TEMPERATURE			20°C ABOVE STANDARD TEMP		
		% BHP	KTAS	GPH	% BHP	KTAS	GPH	% BHP	KTAS	GPH
2000	2550	83	117	11.1	77	118	10.5	72	117	9.9
	2500	78	115	10.6	73	115	9.9	68	115	9.4
	2400	69	111	9.6	64	110	9.0	60	109	8.5
	2300	61	105	8.6	57	104	8.1	53	102	7.7
	2200	53	99	7.7	50	97	7.3	47	95	6.9
	2100	47	92	6.9	44	90	6.6	42	89	6.3
4000	2600	83	120	11.1	77	120	10.4	72	119	9.8
	2550	79	118	10.6	73	117	9.9	68	117	9.4
	2500	74	115	10.1	69	115	9.5	64	114	8.9
	2400	65	110	9.1	61	109	8.5	57	107	8.1
	2300	58	104	8.2	54	102	7.7	51	101	7.3
	2200	51	98	7.4	48	96	7.0	45	94	6.7
6000	2100	45	91	6.6	42	89	6.4	40	87	6.1
	2650	83	122	11.1	77	122	10.4	72	121	9.8
	2600	78	120	10.6	73	119	9.9	68	118	9.4
	2500	70	115	9.6	65	114	9.0	60	112	8.5
	2400	62	109	8.6	57	108	8.2	54	106	7.7
2300	54	103	7.8	51	101	7.4	48	99	7.0	
2200	48	96	7.1	45	94	6.7	43	92	6.4	

**Winds aloft at JFK are: 3325-18
Cruising at 4,500 ft using
65%BHP. Calculate your:**

KTAS?

GPH?



You departed DXR with full fuel and climbing to 4,500 ft. What is your endurance given 65% BHP and allowing a 45 minute reserve?

CESSNA MODEL 172S SECTION 5 PERFORMANCE

SHORT FIELD LANDING DISTANCE AT 2550 POUNDS

CONDITIONS:
Flaps 30°
Power Off
Maximum Braking
Paved, level, dry runway
Zero Wind
Speed at 50 Ft: 61 KIAS

Press Alt In Feet	0°C		10°C		20°C		30°C		40°C	
	Grnd Roll Ft	Total Ft To Clear 50 Ft Obst	Grnd Roll Ft	Total Ft To Clear 50 Ft Obst	Grnd Roll Ft	Total Ft To Clear 50 Ft Obst	Grnd Roll Ft	Total Ft To Clear 50 Ft Obst	Grnd Roll Ft	Total Ft To Clear 50 Ft Obst
S. L.	545	1290	565	1320	585	1350	605	1380	625	1415
1000	565	1320	585	1350	605	1385	625	1420	650	1450
2000	585	1355	610	1385	630	1420	650	1455	670	1490
3000	610	1385	630	1425	655	1460	675	1495	695	1530
4000	630	1425	655	1460	675	1495	700	1535	725	1570
5000	655	1460	680	1500	705	1535	725	1575	750	1615
6000	680	1500	705	1540	730	1580	755	1620	780	1660
7000	705	1545	730	1585	760	1625	785	1665	810	1705
8000	735	1585	760	1630	790	1670	815	1715	840	1755

NOTES:
1. Short field technique as specified in Section 4.
2. Decrease distances 10% for each 9 knots headwind. For operation with tail winds up to 10 knots, increase distances by 10% for each 2 knots.
3. For operation on dry, grass runway, increase distances by 45% of the "ground roll" figure.
4. If landing with flaps up, increase the approach speed by 9 KIAS and allow for 35% longer distances.

Figure 5-11. Short Field Landing Distance

5-23/5-24

Enroute to KSNC you pick up the ASOS and it is reporting:

**Winds: 02010 gusting 18.
Temperature is 5C and the altimeter is 29.92. Calculate:**

Ground Roll:

Total feet to Clear 50ft Obst: