

AVIA 101 Homework Assignment # 8
Answers are located in your Jeppesen Private Pilot Manual

Chapter 8 Airplane Performance

1. List the items included in the empty weight of an aircraft?

2. An aircraft is loaded 110 pounds over maximum certificated gross weight. If fuel (gasoline) is drained to bring the aircraft weight within limits, how much fuel should be drained?
 - A. 18.4 gallons.
 - B. 16.2 gallons.
 - C. 15.7 gallons.

3. GIVEN:

	WEIGHT (LB)	ARM (IN)	MOMENT (LB-IN)
Empty weight	1,495.0	101.4	151,593.0
Pilot and passengers	380.0	64.0	---
Fuel (30 gal usable no reserve)	---	96.0	---

The CG is located how far aft of datum?

- A. CG 92.44.
 - B. CG 119.8.
 - C. CG 94.01.
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4. If an aircraft has a total weight of 2,950 pounds and a total moment of 240,700 pound-inches. If the CG range is from 82.1 to 86.7 inches, what action, if any, should you take before you fly the aircraft?
 - A. Move some load aft in the aircraft.
 - B. Remove some load from the aft of the aircraft.
 - C. Take no action, since the aircraft is properly loaded.

5. How many nautical miles are in 148 statute miles?

6. With a true airspeed of 88 knots and winds from 240° at 16 knots, what heading would be required to maintain a course of 137°? What ground speed would you expect?

7. If you cover 61 nautical miles in 41.5 minutes, what is your groundspeed?

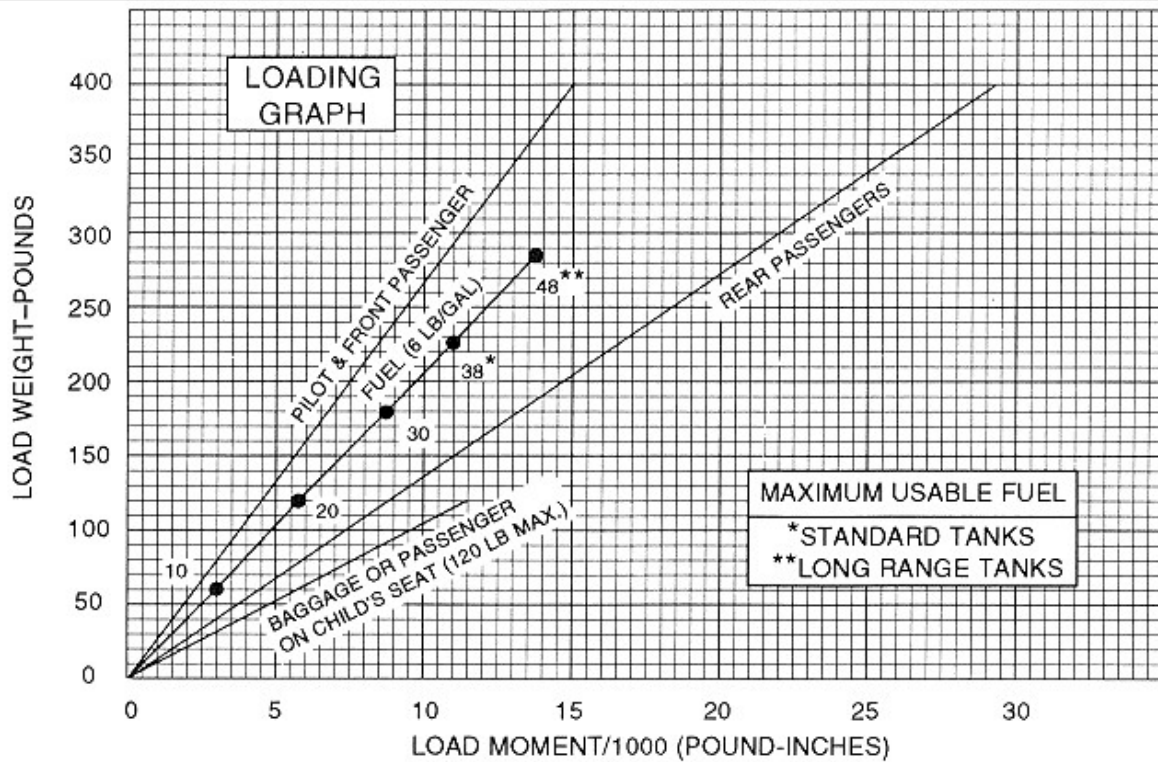
8. What heading should you fly to hold a course of 355° if your true airspeed is 116 knots and the winds are from 050° at 15 knots? What groundspeed would you expect?

9. How much does a gallon of fuel weigh?

10. (Refer to the figure 35 on the next page.) Calculate the moment of the airplane and determine which category is applicable.

	WEIGHT (LB)	MOM/1000
Empty weight	1,350	51.5
Pilot and front passenger	310	---
Rear passengers	96	---
Baggage	---	---
Fuel, 38 gal.	---	---
Oil, 8 qt.	---	-0.2

- A. 79.2, utility category.
- B. 80.8, utility category.
- C. 81.2, normal category



- NOTES: (1) Lines representing adjustable seats show the pilot or passenger center of gravity on adjustable seats positioned for an average occupant. Refer to the Loading Arrangements diagram for forward and aft limits of occupant CG range.
- (2) Engine Oil: 8 Qt. =15 Lb at -0.2 Moment/1000.

NOTE: The empty weight of this airplane does not include the weight of the oil.

