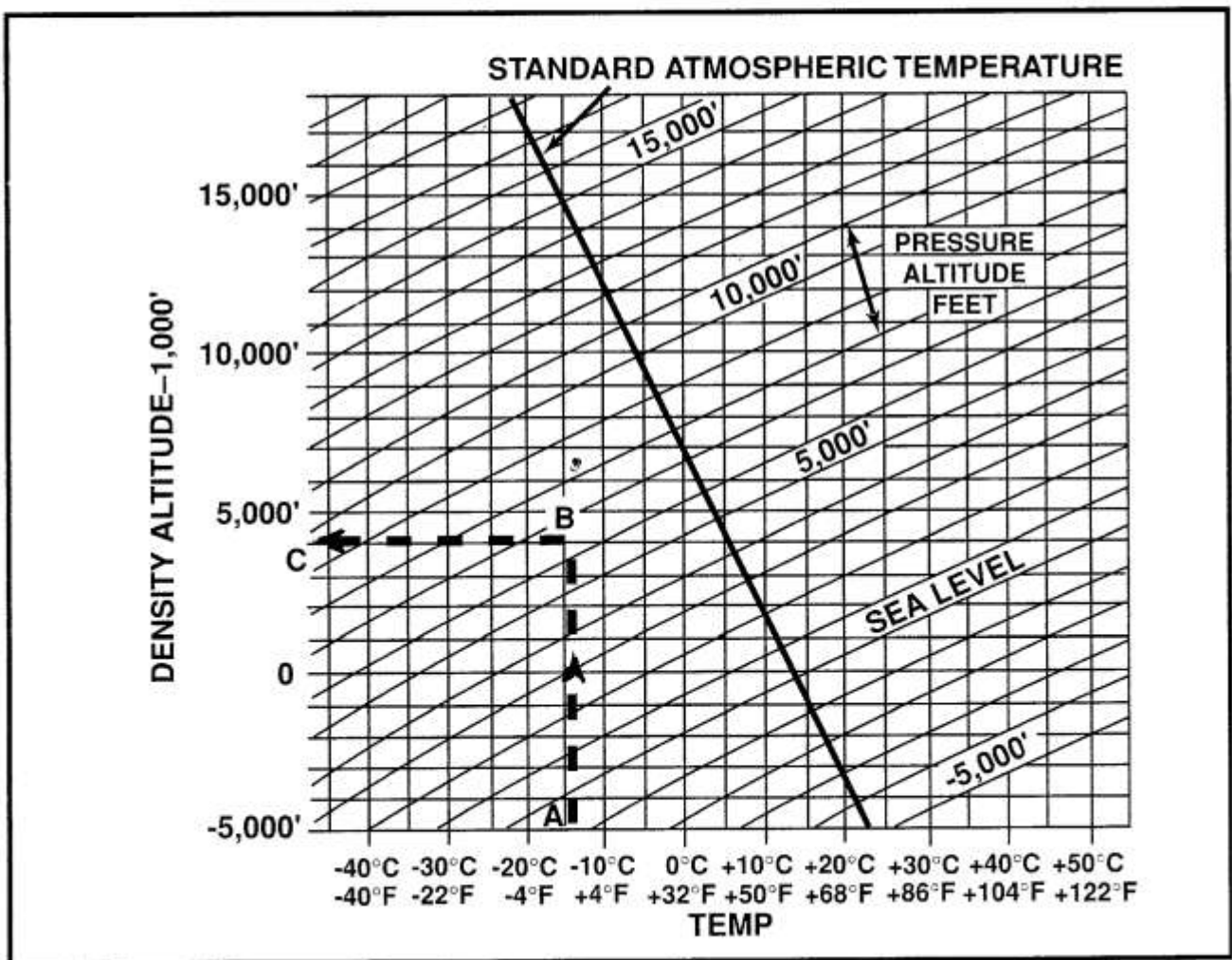


1. What combination of conditions is most detrimental to takeoff and climb performance?
 1. Dry air and low density altitude
 2. Low temperature, low humidity, and low altitude
 3. High temperature, high humidity, and high altitude

2. According to the accompanying chart, a pressure altitude of 5,000 feet with a temperature of +40°C will result in a density altitude of approximately
1. 5,000 feet.
 2. 8,900 feet.
 3. 9,500 feet.



Question 2

3. According to the accompanying takeoff distance chart and the following conditions, what is the total distance necessary to clear a 50-foot obstacle?

Weight1,670 pounds
 Pressure altitude4,000 feet
 Temperature25° C
 Headwind18 knots

1. 1,664 feet
2. 1,732 feet
3. 2,165 feet

TAKEOFF DISTANCE													
SHORT FIELD													
CONDITIONS: Flaps 10° Full Throttle Prior to Brake Release Paved, Level, Dry Runway Zero Wind													
NOTES: 1. Decrease distances 10% for each 9 knots headwind. For operation with tailwinds up to 10 knots, increase distances by 10% for each 2 knots. 2. For operation on a dry, grass runway, increase distances by 15% of the "ground roll" figure.													
WEIGHT LBS	TAKEOFF SPEED KIAS		PRESS ALT FT	0°C		10°C		20°C		30°C		40°C	
	LIFT OFF	AT 50 FT		GRND ROLL	TOTAL TO CLEAR 50 FT OBS	GRND ROLL	TOTAL TO CLEAR 50 FT OBS	GRND ROLL	TOTAL TO CLEAR 50 FT OBS	GRND ROLL	TOTAL TO CLEAR 50 FT OBS	GRND ROLL	TOTAL TO CLEAR 50 FT OBS
1670	50	54	S.L.	840	1190	695	1290	755	1390	810	1495	875	1605
			1000	705	1310	765	1420	825	1530	890	1645	960	1770
			2000	775	1445	840	1565	910	1690	980	1820	1055	1960
			3000	855	1600	925	1730	1000	1870	1080	2020	1165	2185
			4000	940	1775	1020	1920	1100	2060	1190	2250	1285	2440
			5000	1040	1970	1125	2140	1215	2320	1315	2525	1420	2750
			6000	1145	2200	1245	2395	1345	2610	1455	2855	1570	3125
			7000	1270	2470	1375	2705	1490	2960	1615	3255	1745	3590
8000	1405	2800	1525	3080	1655	3395	1795	3765	1940	4195			

Question 3

6. What is the difference between the range and the endurance of an aircraft?
 1. Range is the amount of fuel required to fly to a destination, and endurance is the time it will take to get there.
 2. Range is the amount of time that the aircraft can remain in the air, and endurance is the recommended time that the pilot can fly.
 3. With a given amount of fuel, range is the distance that the aircraft can fly, and endurance is the amount of time that the aircraft can remain in the air.
7. Center of gravity is defined as the theoretical point
 1. from which all horizontal measurements are made.
 2. where all of the aircraft's lift is considered to be concentrated.
 3. where all of the aircraft's weight is considered to be concentrated.
8. One of the items included in an aircraft's basic empty weight is
 1. baggage.
 2. usable fuel.
 3. unusable fuel.

9. What is the CG location after the airplane is loaded with full fuel?
1. 42.16 inches
 2. 42.66 inches
 3. 43.03 inches
10. How much fuel can be carried in the aircraft without exceeding a maximum takeoff weight of 2,700 pounds?
1. 11.7 gallons
 2. 19.6 gallons
 3. 27.5 gallons

WEIGHT and BALANCE FORM			
ITEM	WEIGHT (pounds)	ARM (inches)	MOMENT (pound-inches)
Basic Empty Wt.	1772.4	+34	60,261.6
Pilot	180.0	+36	6,480.0
Front Seat Passenger	165.0	+36	5,940.0
Rear Seat Passenger	345.0	+70	24,150.0
Fuel (60 gallons)		+48	
Baggage	120.0	+95	11,400.0
TOTAL			
CG = _____ INCHES			