Demo PDF file. This file includes questions: 10 from 44. Full version of file looks the same as demo, but full version includes all questions. You may download file with all questions by link on bottom of this page

Aircraft Performance

1. What effect does high density altitude, as compared to low density altitude, have on propeller efficiency and why?

- Efficiency is increased due to less friction on the propeller blades.
- **Efficiency is reduced because the propeller exerts less force at high density altitudes than at low density altitudes.**
- Efficiency is reduced due to the increased force of the propeller in the thinner air.

2. What is density altitude?

- The height above the standard datum plane.
- **The pressure altitude corrected for non-standard temperature.**
- The altitude read directly from the altimeter.

3. If the outside air temperature (OAT) at a given altitude is warmer than standard, the density altitude is

- Equal to pressure altitude.
- Lower than pressure altitude.
- **Higher than pressure altitude.**

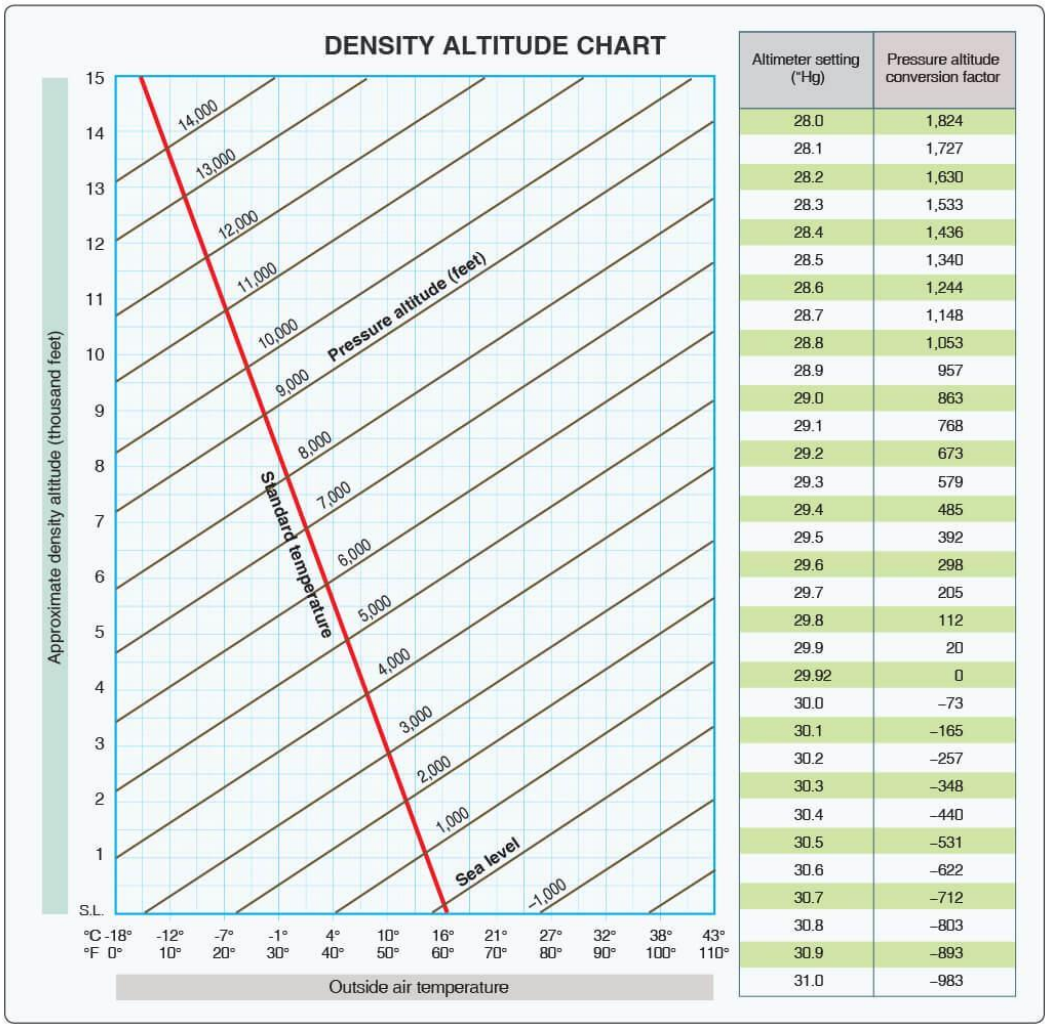
4. Which combination of atmospheric conditions will reduce aircraft takeoff and climb performance?

- Low temperature, low relative humidity, and low density altitude.
- High temperature, low relative humidity, and low density altitude.
- **High temperature, high relative humidity, and high density altitude.**

5. What effect does high density altitude have on aircraft performance?

- It increases engine performance.
- **It reduces climb performance.**
- It increases takeoff performance.

6. (Refer to Figure 8.) What is the effect of a temperature increase from 25 to 50 °F on the density altitude if the pressure altitude remains at 5,000 feet?



Altimeter setting ("Hg)	Pressure altitude conversion factor
28.0	1,824
28.1	1,727
28.2	1,630
28.3	1,533
28.4	1,436
28.5	1,340
28.6	1,244
28.7	1,148
28.8	1,053
28.9	957
29.0	863
29.1	768
29.2	673
29.3	579
29.4	485
29.5	392
29.6	298
29.7	205
29.8	112
29.9	20
29.92	0
30.0	–73
30.1	–165
30.2	–257
30.3	–348
30.4	–440
30.5	–531
30.6	–622
30.7	–712
30.8	–803
30.9	–893
31.0	–983

FIGURE 8.—Density Altitude Chart.

- 1,200-foot increase.
- 1,400-foot increase.
- **1,650-foot increase.**

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7. (Refer to Figure 8.) Determine the pressure altitude with an indicated altitude of 1,380 feet MSL with an altimeter setting of 28.22 at standard temperature.

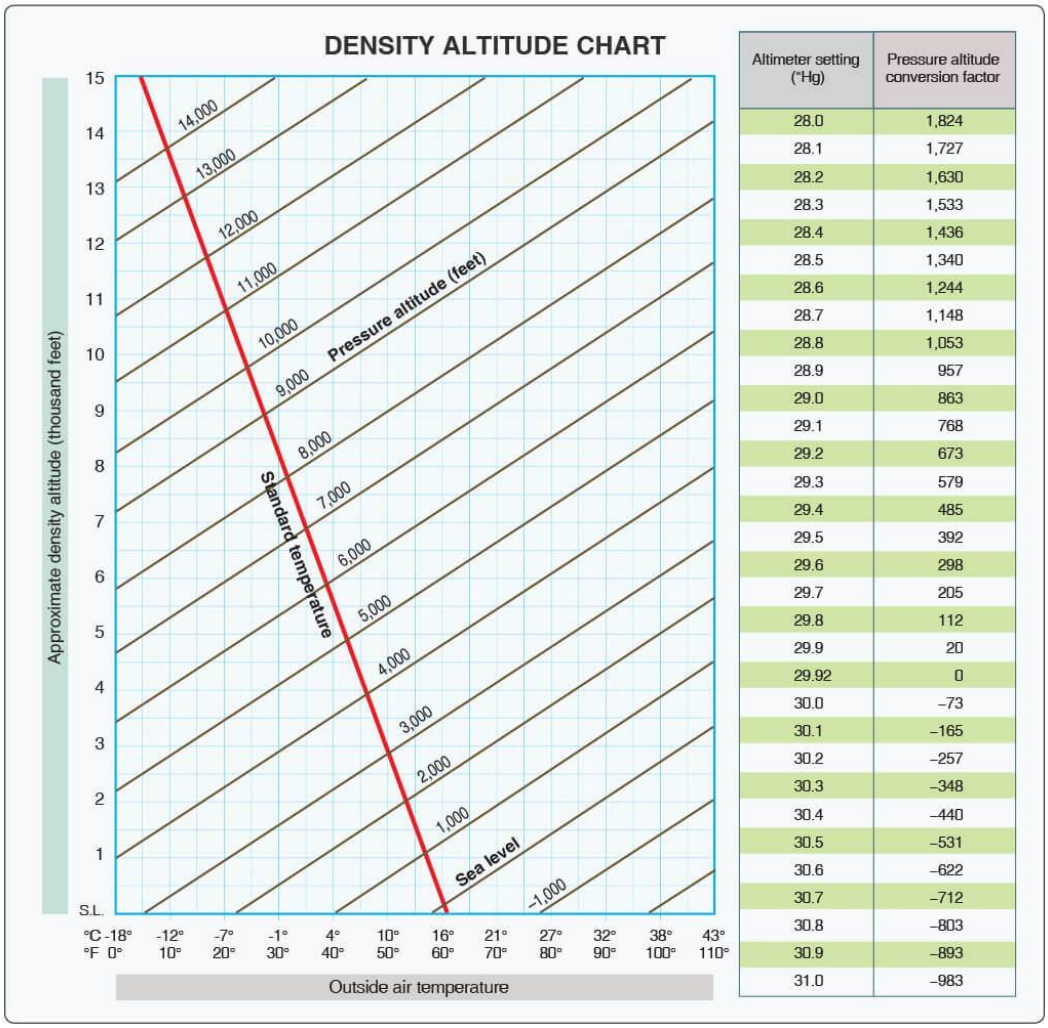

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FIGURE 8.—Density Altitude Chart.

- 2,913 feet MSL.
- 3,010 feet MSL.
- **2,991 feet MSL.**

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8. (Refer to Figure 8.) Determine the density altitude for these conditions: Altimeter setting: 29.25. Runway temperatur: +81 °F. Airport elevatio: 5,250 ft MSL

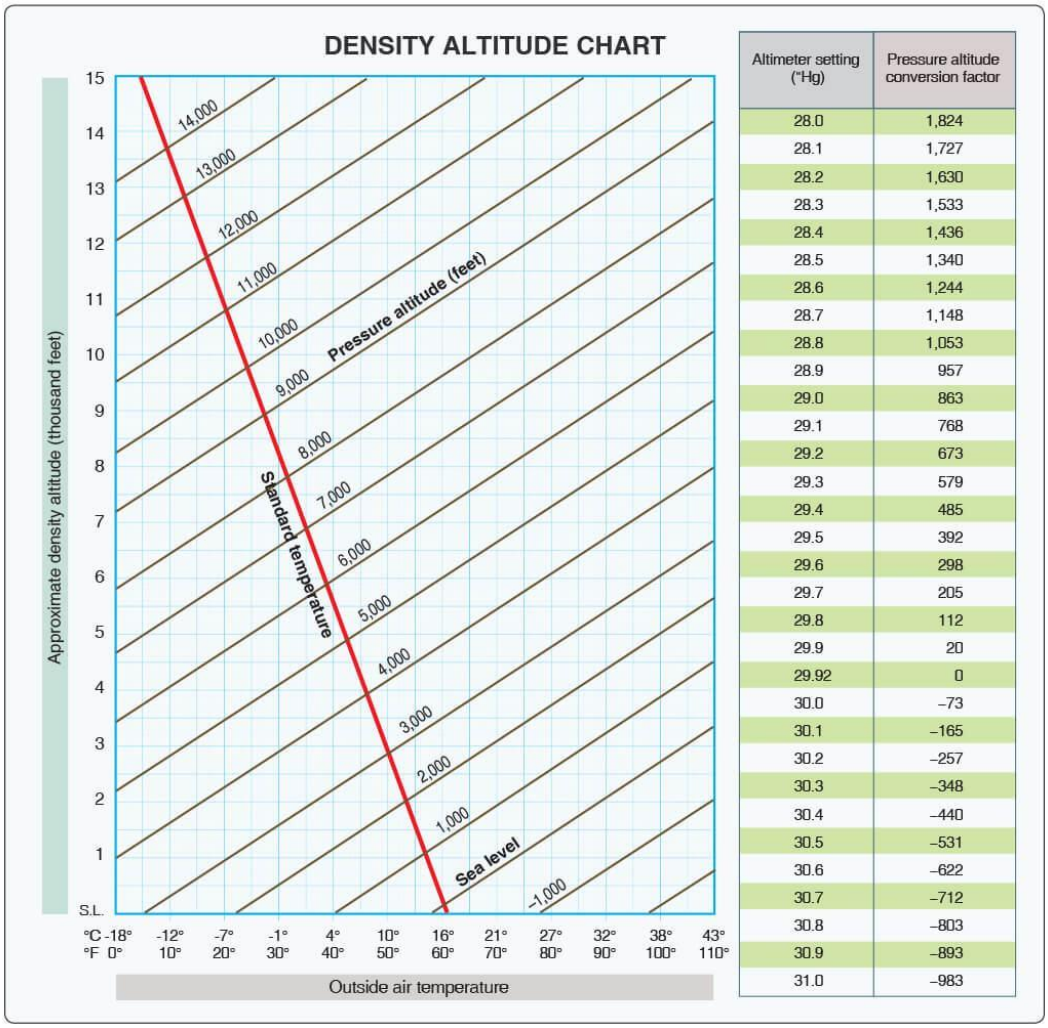

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FIGURE 8.—Density Altitude Chart.

- 4,600 feet MSL.
- 5,877 feet MSL.
- **8,500 feet MSL.**

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9. (Refer to Figure 8.) Determine the pressure altitude at an airport that is 3,563 feet MSL with an altimeter setting of 29.96.

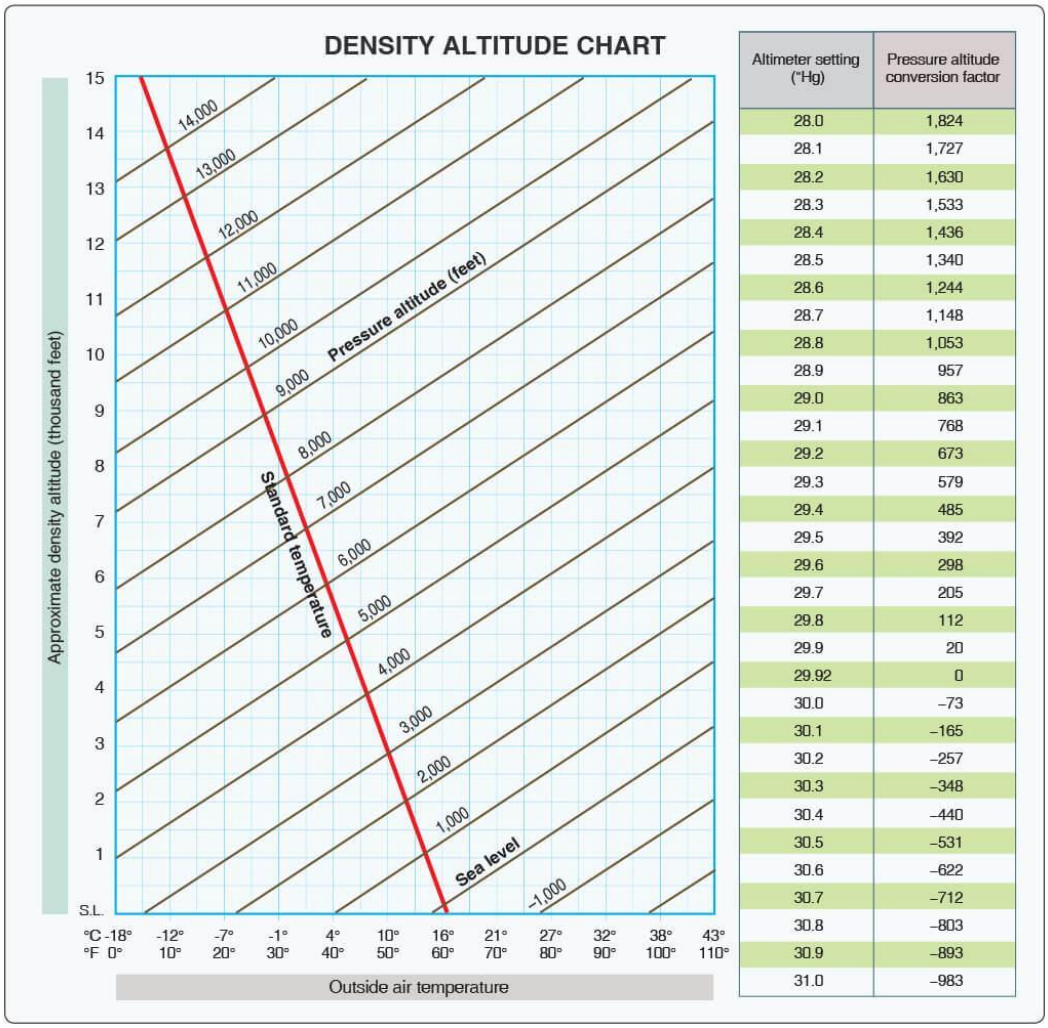

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FIGURE 8.—Density Altitude Chart.

- **3,527 feet MSL.**
- 3,556 feet MSL.
- 3,639 feet MSL.

Note:
Referencing FAA Figure 8, use the following steps:

'1. Since the altimeter setting that is given is not shown in FAA Figure 8, interpolation is necessary. Locate the settings immediately above and below the given value of 29.96" Hg:

Altimeter Setting Conversion Factor
29.92 0 feet
30.00 -73 feet
2. Determine the difference between the two conversion factors: 0 – 73 = -73 feet
The setting 29.96 is halfway between the two values, so: -73 ÷ 2 = -36.5 feet

3. Determine the amount of difference to be subtracted from the 30.00" Hg conversion factor.

4. Subtract the correction factor from the airport elevation to find pressure altitude: 3,563.0 – 36.5 = 3,526.5 feet MSL (pressure altitude)

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10. (Refer to Figure 8.) What is the effect of a temperature increase from 35 to 50 °F on the density altitude if the pressure altitude remains at 3,000 feet MSL?

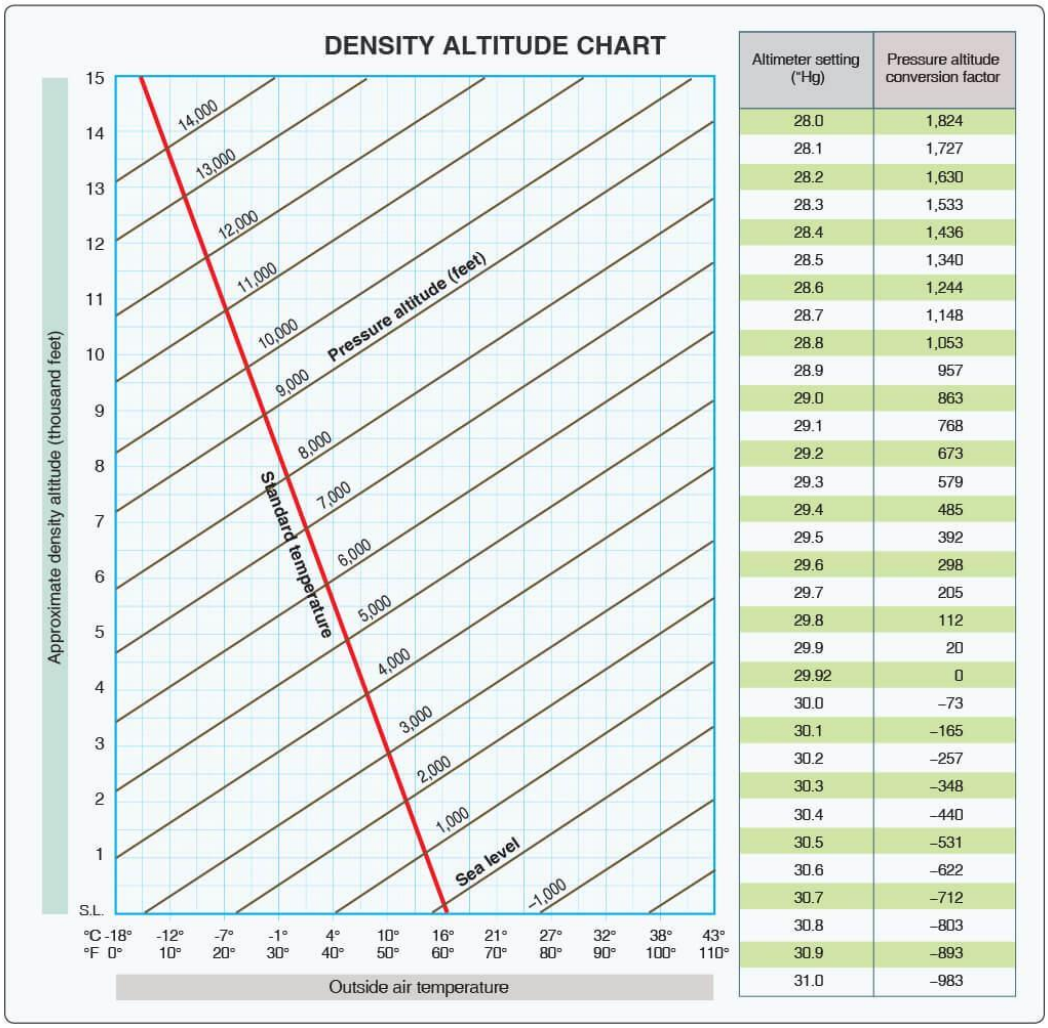

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FIGURE 8.—Density Altitude Chart.

- **1,000-foot increase.**
- 1,100-foot decrease.
- 1,300-foot increase.

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