

DENSITY ALTITUDE EXERCICES

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|------|----------|---|------------|
| Es-1 | QNH | : | 1026 [hPa] |
| | Altitude | : | 1103 [ft] |
| | OAT | : | 6 [°C] |

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|------|----------|---|-----------|
| Es-2 | QNH | : | 985 [hPa] |
| | Altitude | : | 8047 [ft] |
| | OAT | : | 27 [°C] |

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|------|----------|---|------------|
| Es-3 | QNH | : | 1000 [hPa] |
| | Altitude | : | 3425 [ft] |
| | OAT | : | 9 [°C] |

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|------|----------|---|-----------|
| Es-4 | QNH | : | 995 [hPa] |
| | Altitude | : | 2150 [ft] |
| | OAT | : | -11 [°C] |

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|------|----------|---|-----------|
| Es-5 | QNH | : | 999 [hPa] |
| | Altitude | : | 557 [ft] |
| | OAT | : | -13 [°C] |

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|------|----------|---|-----------|
| Es-6 | QNH | : | 994 [hPa] |
| | Altitude | : | 1928 [ft] |
| | OAT | : | 18 [°C] |

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|------|----------|---|------------|
| Es-7 | QNH | : | 1006 [hPa] |
| | Altitude | : | 524 [ft] |
| | OAT | : | 7 [°C] |

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|------|----------|---|------------|
| Es-8 | QNH | : | 1016 [hPa] |
| | Altitude | : | 7987 [ft] |
| | OAT | : | 22 [°C] |

DENSITY ALTITUDE SOLUTIONS

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|------|-----|----------|
| Es-1 | PA: | 752 [ft] |
| | DA: | -63 [ft] |

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|------|-----|------------|
| Es-2 | PA: | 8803 [ft] |
| | DA: | 12174 [ft] |

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|------|-----|-----------|
| Es-3 | PA: | 3776 [ft] |
| | DA: | 3878 [ft] |

| | | |
|------|-----|-----------|
| Es-4 | PA: | 2636 [ft] |
| | DA: | 32 [ft] |

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|------|-----|------------|
| Es-5 | PA: | 935 [ft] |
| | DA: | -2291 [ft] |

| | | |
|------|-----|-----------|
| Es-6 | PA: | 2441 [ft] |
| | DA: | 3264 [ft] |

| | | |
|------|-----|-----------|
| Es-7 | PA: | 713 [ft] |
| | DA: | -121 [ft] |

| | | |
|------|-----|------------|
| Es-8 | PA: | 7906 [ft] |
| | DA: | 10663 [ft] |

DENSITY ALTITUDE EXPLAINED SOLUTIONS

Exercice-1

Pressure Altitude QNH 1026

$$(QNE - QNH) \times 27 = \dots \text{ [ft]}$$

$$(1013 - 1026) \times 27 = -351 \text{ [ft]}$$

Altitude + ft = \dots [ft]

$$1103 + -351 = 752 \text{ [ft]}$$

Standard Temperature at 1103 ft

ISO MSL - [Altit. * (2 / 1000) = \dots [°C]

$$15 - [1103 * (2 / 1000) = 12.8 \text{ [°C]}$$

Density Altitude at 1103 with OAT 6 [°C]

$$120 \times (\text{OAT Temp.} - \text{Temp. ISO}) = \dots \text{ [ft]}$$

$$120 \times (6 - 12.794) = -815.3 \text{ [ft]}$$

PA + ft = \dots [ft]

$$752 + -815 = -63 \text{ [ft]}$$

Exercice-3

Pressure Altitude with QNH 1000

$$(QNE - QNH) \times 27 = \dots \text{ [ft]}$$

$$(1013 - 1000) \times 27 = 351 \text{ [ft]}$$

Altitude + ft = \dots [ft]

$$3425 + 351 = 3776 \text{ [ft]}$$

Standard Temperature at 3425 ft

ISO MSL - [Altit. * (2 / 1000) = \dots [°C]

$$15 - [3425 * (2 / 1000) = 8.15 \text{ [°C]}$$

Density Altitude at 3425 with OAT 9 [°C]

$$120 \times (\text{OAT Temp.} - \text{Temp. ISO}) = \dots \text{ [ft]}$$

$$120 \times (9 - 8.15) = 102 \text{ [ft]}$$

PA + ft = \dots [ft]

$$3776 + 102 = 3878 \text{ [ft]}$$

Exercice-2

Pressure Altitude QNH 985

$$(QNE - QNH) \times 27 = \dots \text{ [ft]}$$

$$(1013 - 985) \times 27 = 756 \text{ [ft]}$$

Altitude + ft = \dots [ft]

$$8047 + 756 = 8803 \text{ [ft]}$$

Standard Temperature at 8047 ft

ISO MSL - [Altit. * (2 / 1000) = \dots [°C]

$$15 - [8047 * (2 / 1000) = -1.1 \text{ [°C]}$$

Density Altitude at 8047 with OAT 27 [°C]

$$120 \times (\text{OAT Temp.} - \text{Temp. ISO}) = \dots \text{ [ft]}$$

$$120 \times (27 - -1.094) = 3371.3 \text{ [ft]}$$

PA + ft = \dots [ft]

$$8803 + 3371 = 12174 \text{ [ft]}$$

Exercice-4

Pressure Altitude with QNH 995

$$(QNE - QNH) \times 27 = \dots \text{ [ft]}$$

$$(1013 - 995) \times 27 = 486 \text{ [ft]}$$

Altitude + ft = \dots [ft]

$$2150 + 486 = 2636 \text{ [ft]}$$

Standard Temperature at 2150 ft

ISO MSL - [Altit. * (2 / 1000) = \dots [°C]

$$15 - [2150 * (2 / 1000) = 10.7 \text{ [°C]}$$

Density Altitude at 2150 with OAT ## [°C]

$$120 \times (\text{OAT Temp.} - \text{Temp. ISO}) = \dots \text{ [ft]}$$

$$120 \times (-11 - 10.7) = -2604 \text{ [ft]}$$

PA + ft = \dots [ft]

$$2636 + -2604 = 32 \text{ [ft]}$$

DENSITY ALTITUDE EXPLAINED SOLUTIONS

Exercice-5

Pressure Altitude QNH 999

$$(QNE - QNH) \times 27 = \dots \text{ [ft]}$$

$$(1013 - 999) \times 27 = 378 \text{ [ft]}$$

Altitude + ft = \dots [ft]

$$557 + 378 = 935 \text{ [ft]}$$

Standard Temperature at 557 ft

ISO MSL - [Altit. * (2 / 1000) = \dots [°C]

$$15 - [557 * (2 / 1000) = 13.9 \text{ [°C]}$$

Density Altitude at 557 with OAT## [°C]

$$120 \times (\text{OAT Temp.} - \text{Temp. ISO}) = \dots \text{ [ft]}$$

$$120 \times (-13 - 13.886) = -3226 \text{ [ft]}$$

PA + ft = \dots [ft]

$$935 + -3226 = -2291 \text{ [ft]}$$

Exercice-7

Pressure Altitude with QNH 1006

$$(QNE - QNH) \times 27 = \dots \text{ [ft]}$$

$$(1013 - 1006) \times 27 = 189 \text{ [ft]}$$

Altitude + ft = \dots [ft]

$$524 + 189 = 713 \text{ [ft]}$$

Standard Temperature at 524 ft

ISO MSL - [Altit. * (2 / 1000) = \dots [°C]

$$15 - [524 * (2 / 1000) = 14 \text{ [°C]}$$

Density Altitude at 524 with OAT 7 [°C]

$$120 \times (\text{OAT Temp.} - \text{Temp. ISO}) = \dots \text{ [ft]}$$

$$120 \times (7 - 13.952) = -834.2 \text{ [ft]}$$

PA + ft = \dots [ft]

$$713 + -834 = -121 \text{ [ft]}$$

Exercice-6

Pressure Altitude QNH 994

$$(QNE - QNH) \times 27 = \dots \text{ [ft]}$$

$$(1013 - 994) \times 27 = 513 \text{ [ft]}$$

Altitude + ft = \dots [ft]

$$1928 + 513 = 2441 \text{ [ft]}$$

Standard Temperature at 1928 ft

ISO MSL - [Altit. * (2 / 1000) = \dots [°C]

$$15 - [1928 * (2 / 1000) = 11.1 \text{ [°C]}$$

Density Altitude at 1928 with OAT18 [°C]

$$120 \times (\text{OAT Temp.} - \text{Temp. ISO}) = \dots \text{ [ft]}$$

$$120 \times (18 - 11.144) = 822.72 \text{ [ft]}$$

PA + ft = \dots [ft]

$$2441 + 823 = 3264 \text{ [ft]}$$

Exercice-8

Pressure Altitude with QNH 1016

$$(QNE - QNH) \times 27 = \dots \text{ [ft]}$$

$$(1013 - 1016) \times 27 = -81 \text{ [ft]}$$

Altitude + ft = \dots [ft]

$$7987 + -81 = 7906 \text{ [ft]}$$

Standard Temperature at 7987 ft

ISO MSL - [Altit. * (2 / 1000) = \dots [°C]

$$15 - [7987 * (2 / 1000) = -1 \text{ [°C]}$$

Density Altitude at 7987 with OAT22 [°C]

$$120 \times (\text{OAT Temp.} - \text{Temp. ISO}) = \dots \text{ [ft]}$$

$$120 \times (22 - -0.974) = 2756.9 \text{ [ft]}$$

PA + ft = \dots [ft]

$$7906 + 2757 = 10663 \text{ [ft]}$$