

Solve each of the following conversion problems. Round answers to THREE SIGNIFICANT DIGITS and be sure to include the correct UNIT on your answer.

1. 7.53 atm to mm of Hg. 5720 mmHg

$$\frac{7.53 \text{ atm}}{1 \text{ atm}} \times \frac{760 \text{ mmHg}}{1 \text{ atm}} = 5722.8$$

2. 165 torr to mm of Hg. 165 mmHg

$$\frac{165 \text{ torr}}{1 \text{ torr}} \times \frac{1 \text{ mmHg}}{1 \text{ torr}} = 165 \text{ mmHg}$$

3. 1928 Pa to atm. 0.0190 atm

$$\frac{1928 \text{ Pa}}{101325 \text{ Pa}} \times \frac{1 \text{ atm}}{1 \text{ atm}} = 0.0190$$

4. 315 kPa to atm. 3.11 atm

$$\frac{315 \text{ kPa}}{101.325 \text{ kPa}} \times \frac{1 \text{ atm}}{1 \text{ atm}} = 3.1088$$

5. 2.5 atm to torr.  $1.90 \times 10^3$  torr

$$\frac{2.5 \text{ atm}}{1 \text{ atm}} \times \frac{760 \text{ Torr}}{1 \text{ atm}} = 1900$$

6. 799 mm of Hg to kPa. 107 kPa

$$\textcircled{1} \frac{799 \text{ mmHg}}{760 \text{ mmHg}} \times \frac{1 \text{ atm}}{1 \text{ atm}} = 1.0513 \text{ atm}$$

7. 535.1 kPa to psi. 77.6 psi

$$\textcircled{2} \frac{1.0513 \text{ atm}}{1 \text{ atm}} \times \frac{101.325 \text{ kPa}}{1 \text{ atm}} = 106.524$$

8. 29.9 in of Hg to atm. 0.999 atm

$$\textcircled{1} \frac{535.1 \text{ kPa}}{101.32 \text{ kPa}} \times \frac{1 \text{ atm}}{1 \text{ atm}} = 5.281$$

$$\textcircled{2} \frac{5.281 \text{ atm}}{1 \text{ atm}} \times \frac{14.7 \text{ Psi}}{1 \text{ atm}} = 77.631$$

9. 686 torr to psi. 13.3 psi

$$\textcircled{1} \frac{29.9 \text{ inHg}}{25.4 \text{ mmHg}} \times \frac{760 \text{ mmHg}}{1 \text{ inHg}} = 759.46 \text{ mmHg}$$

$$\textcircled{2} \frac{759.46 \text{ mmHg}}{760 \text{ mmHg}} \times \frac{1 \text{ atm}}{1 \text{ atm}} = 1.000$$

10. 3.98 atm to Pa. 403000000 Pa

$$\textcircled{1} \frac{686 \text{ torr}}{760 \text{ torr}} \times \frac{1 \text{ atm}}{1 \text{ atm}} = 0.9026$$

$$\textcircled{2} \frac{0.9026 \text{ atm}}{1 \text{ atm}} \times \frac{14.7 \text{ psi}}{1 \text{ atm}} = 13.268$$

$$\frac{3.98 \text{ atm}}{1 \text{ atm}} \times \frac{101325 \text{ Pa}}{1 \text{ atm}} = 40327350$$

1 atm = 760 mm Hg  
1 atm = 760 torr  
1 in Hg = 25.4 mm Hg

1 atm = 101325 Pa  
1 atm = 101.325 kPa

1 atm = 14.7 psi  
1 mm Hg = 1 torr