

**P 2.3** (pg 1 of 2) **Solving Literal Equations - *Dusting off your algebra skills***

Name \_\_\_\_\_

Solving literal equations uses the same algebra rules that you already know and love. However instead of solving for specific  $x$  or  $y$  values, when solving a literal equation, you are simply rearranging variables into a more convenient form so that you can plug in values for the variables at a later time. I think your algebra teacher would have called this “isolating” for a particular variable.

1. Solve for  $y$        $4y + 2 = 12x$

2. Solve for  $m$        $y = mx + b$

3. Solve for  $L$        $V = LWH$

4. Solve for  $B$        $V = \frac{1}{3}Bh$

5. Solve for  $F$        $C = \frac{5}{9}(F - 32)$

6. Solve for  $K$        $C = K + 273$

7. Solve for  $m$        $D = \frac{m}{V}$

8. Solve for  $V$        $D = \frac{m}{V}$

9. Solve for  $T_1$        $\frac{P_1V_1}{T_1} = \frac{P_2V_2}{T_2}$

10. Solve for  $r$        $V = \pi r^2 h$

11. Solve for  $n$        $PV = nRT$

12. Substitute  $\frac{m}{MM}$  for  $n$  into  $PV = nRT$ , then solve for  $MM$

1. Solve for  $y$        $4y + 2 = 12x$     so  $y = \frac{12x - 2}{4}$
2. Solve for  $m$        $y = mx + b$     so  $m = \frac{y - b}{x}$
3. Solve for  $L$        $V = LWH$     so  $L = \frac{V}{WH}$
4. Solve for  $B$        $V = \frac{1}{3}Bh$     so  $B = \frac{3V}{h}$
5. Solve for  $F$        $C = \frac{5}{9}(F - 32)$     so  $F = \left(\frac{9C}{5}\right) + 32$
6. Solve for  $K$        $C = K + 273$     so  $K = C - 273$
7. Solve for  $m$        $D = \frac{m}{V}$     so  $m = DV$
8. Solve for  $V$        $D = \frac{m}{V}$     so  $V = \frac{m}{D}$
9. Solve for  $T_1$        $\frac{P_1V_1}{T_1} = \frac{P_2V_2}{T_2}$     so  $T_1 = \frac{P_1V_1T_2}{P_2V_2}$
10. Solve for  $r$        $V = \pi r^2 h$     so  $r = \sqrt{\frac{V}{\pi h}}$     OR  $r = \left(\frac{V}{\pi h}\right)^{\frac{1}{2}}$
11. Solve for  $n$        $PV = nRT$     so  $n = \frac{PV}{RT}$
12. Substitute  $\frac{m}{MM}$  for  $n$  into  $PV = nRT$ , then solve for  $MM$   
 So  $PV = \frac{m}{MM}RT$  then  $MM = \frac{mRT}{PV}$