

18. $v = ?$
 $m = 12.0 \text{ g}$
 Cl_2

$$v = nV$$

$$n = \frac{m}{M}$$
$$= \frac{12.0 \text{ g}}{70.90 \text{ g/mol}}$$
$$= 0.169 \text{ mol}$$

19. $v = ?$
 $m = 0.9 \text{ g}$
 O_2

$$v = nV$$
$$= 0.028 \text{ mol}$$
$$\times 22.7 \text{ L/mol}$$

$$0.64 \text{ L}$$

$$n = \frac{m}{M} = \frac{0.9 \text{ g}}{32.00 \text{ g/mol}}$$
$$= 0.028 \text{ mol}$$

20. $v = ?$
 $n = 0.5 \text{ mol}$
 N_2

$$v = nV$$
$$= 0.5 \text{ mol} (22.7 \text{ L/mol})$$
$$= \underline{\underline{11 \text{ L}}}$$