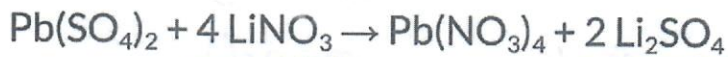


# More Stoichiometry Practice !

name: SOLUTIONS

(SHOW ALL WORK/STEPS)

1. Using the following equation:



How much (in grams) lithium nitrate will be needed to make 250 grams of lithium sulfate.

$$M_{\text{LiNO}_3} = 69 \text{ g/mole}$$

$$M_{\text{Li}_2\text{SO}_4} = 110 \text{ g/mole}$$

4 moles

$$m = n \cdot M$$

$$m = 4(69)$$

$$m = 276 \text{ g}$$

2 moles

$$m = n \cdot M$$

$$m = 2(110)$$

$$m = 220 \text{ g}$$

x

250g

$$x = 313.6 \text{ g}$$

2. Using the following equation:



Calculate how many grams of iron can be made from 16.5 grams of  $\text{Fe}_2\text{O}_3$ .

$$M_{\text{Fe}_2\text{O}_3} = 160 \text{ g/mole}$$

$$M_{\text{Fe}} = 55.8 \text{ g/mole}$$

1 mole

$$m = n \cdot M$$

$$m = 1(160)$$

$$m = 160 \text{ g}$$

2 mole

$$m = n \cdot M$$

$$m = 2(55.8)$$

$$m = 111.6 \text{ g}$$

16.5g

x

$$x = 11.5 \text{ g}$$

3. Using the following equation:



How many moles and grams of  $\text{KMnO}_4$  are needed for this reaction on 11.4 grams of  $\text{KNO}_3$ ?

$M_{\text{KMnO}_4} = 158 \text{ g/mol}$   
 $M_{\text{KNO}_3} = 101 \text{ g/mol}$

	2 moles	5 moles	
	$m = n \cdot M$	$m = n \cdot M$	
	$m = 2(158)$	$m = 5(101)$	
	$m = 316 \text{ g}$	$m = 505 \text{ g}$	
	$x$	11.4 g	
	<div style="border: 1px solid black; padding: 5px; display: inline-block;"><math>x = 7.13 \text{ g}</math></div>		

$n = \frac{m}{M}$   
 $n = \frac{7.13}{158}$   

$n = 0.045 \text{ moles}$

4. Using the following equation:



Calculate how many grams of iodine are needed to prepare 0.2 moles of  $\text{ICl}$  by this reaction.

$M_{\text{I}_2} = 254 \text{ g/mol}$   
 $M_{\text{ICl}} = 162.5 \text{ g/mol}$

	2 mole	5 mole	
	$x$	0.2 moles	
	<div style="border: 1px solid black; padding: 5px; display: inline-block;"><math>x = 0.08 \text{ moles I}_2</math></div>		

$\downarrow$   
 $n = \frac{m}{M}$   
 $m = n \cdot M$   
 $m = 0.08(254)$   

$m = 20.32 \text{ g}$