Quiz 17.3 – Weak Acid/Base Titrations

Name: _____

These questions concern titrating a solution of HNO_2 with NaOH. $25.00\ ml$ of the HNO_2 solution with unknown concentration are placed in an Erlenmeyer flask, and a burette is filled with a $0.575\ M$ solution of NaOH

Question 1

NaOH is added slowly while the pH is monitored. How will you know when the equivalence point of the titration has been reached?

Question 2

The equivalence point is reached after $23.42\ ml$ of the base have been added.
What was the initial acid concentration?

Question 3

Now that you know the initial concentration, calculate what the pH should have been before any base was added

Question 4

What is the pH at the equivalence point, and which acid/base indicator would be appropriate for identifying the end-point in a titrations without a pH meter?

Question 5

What will the pH be after $11.71\ ml$ of NaOH have been added?

Question 6

What will the pH be after you have added $23.67\ ml$ and $23.17\ ml$ of the NaOH solution

Question 7

On the back of this page, sketch the titration curve, noting the pH at the most important points

Pioneers

By Carol Lynn Pearson

My people were Mormon pioneers.
Is the blood still good?
They stood in awe as truth
Flew by like a dove
And dropped a feather in the West.
Where truth flies you follow
If you are a pioneer.
I have searched the skies
And now and then
Another feather has fallen.
I have packed the handcart again
Packed it with the precious things
And thrown away the rest.
I will sing by the fires at night
Out there on uncharted ground
Where I am my own captain of tens
Where I blow the bugle
Bring myself to morning prayer
Map out the miles
And never know when or where
Or if at all I will finally say,
"This is the place,"
I face the plains
On a good day for walking.
The sun rises
And the mist clears.
I will be all right:
My people were Mormon Pioneers.