

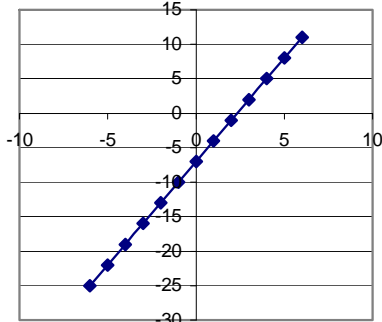
5-3 Examples of linear and Non linear equations.

The graphs of several equations are plotted below. Any (x,y) pair on the line will satisfy or "fit" the equation. As you look at them, try to decide what a linear equation looks like.

^ means "to the power of" in the chart program used to make these graphs.

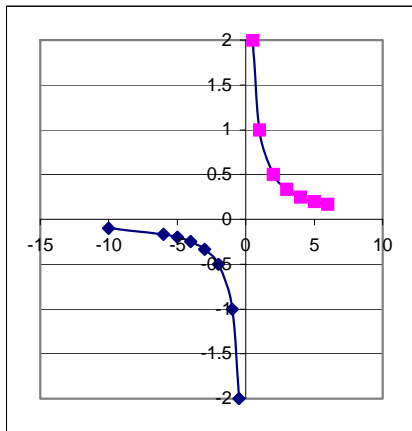
y=3x-7

| x | y |
|----|-----|
| -6 | -25 |
| -5 | -22 |
| -4 | -19 |
| -3 | -16 |
| -2 | -13 |
| -1 | -10 |
| 0 | -7 |
| 1 | -4 |
| 2 | -1 |
| 3 | 2 |
| 4 | 5 |
| 5 | 8 |
| 6 | 11 |



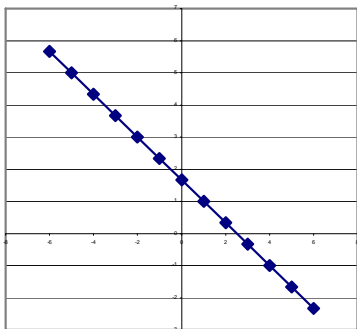
y=1/x

| x | y |
|------|-------|
| -10 | -0.1 |
| -6 | -0.17 |
| -5 | -0.2 |
| -4 | -0.25 |
| -3 | -0.33 |
| -2 | -0.5 |
| -1 | -1 |
| -0.5 | -2 |
| 0.5 | 2 |
| 1 | 1 |
| 2 | 0.5 |
| 3 | 0.333 |
| 4 | 0.25 |
| 5 | 0.2 |
| 6 | 0.167 |



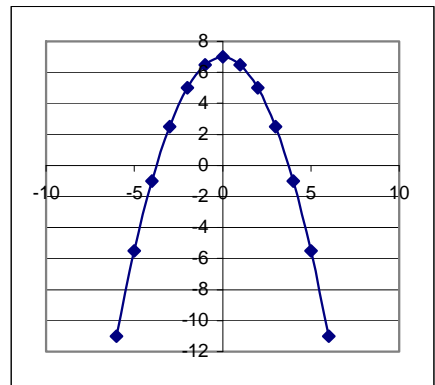
2x+3y=5

| x' | y |
|----|--------|
| -6 | 5 2/3 |
| -5 | 5 |
| -4 | 4 1/3 |
| -3 | 3 2/3 |
| -2 | 3 |
| -1 | 2 2/3 |
| 0 | 1 1/3 |
| 1 | 1 |
| 2 | 1/3 |
| 3 | -1/3 |
| 4 | -1 |
| 5 | -1 2/3 |
| 6 | -2 1/3 |



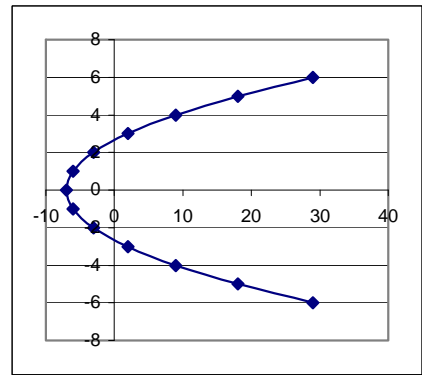
y=-0.5x^2+7

| x | y |
|----|------|
| -6 | -11 |
| -5 | -5.5 |
| -4 | -1 |
| -3 | 2.5 |
| -2 | 5 |
| -1 | 6.5 |
| 0 | 7 |
| 1 | 6.5 |
| 2 | 5 |
| 3 | 2.5 |
| 4 | -1 |
| 5 | -5.5 |
| 6 | -11 |



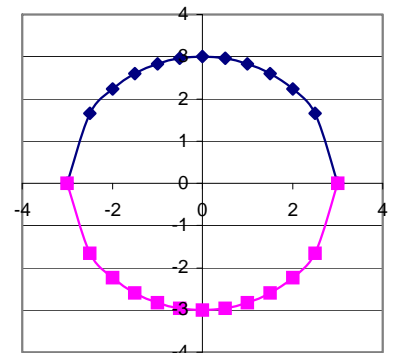
y^2=x+7

| y | x |
|----|----|
| -6 | 29 |
| -5 | 18 |
| -4 | 9 |
| -3 | 2 |
| -2 | -3 |
| -1 | -6 |
| 0 | -7 |
| 1 | -6 |
| 2 | -3 |
| 3 | 2 |
| 4 | 9 |
| 5 | 18 |
| 6 | 29 |



x^2+y^2=9

| x | y | also y |
|------|-------|----------|
| -3 | 0 | 0 |
| -2.5 | 1.658 | -1.65831 |
| -2 | 2.236 | -2.23607 |
| -1.5 | 2.598 | -2.59808 |
| -1 | 2.828 | -2.82843 |
| -0.5 | 2.958 | -2.95804 |
| 0 | 3 | -3 |
| 0.5 | 2.958 | -2.95804 |
| 1 | 2.828 | -2.82843 |
| 1.5 | 2.598 | -2.59808 |
| 2 | 2.236 | -2.23607 |
| 2.5 | 1.658 | -1.65831 |
| 3 | 0 | 0 |



Circle the equations below that are linear.

a) $y=3x^2-8$

$y^2-4x+9=0$

$3x+7y=9$

$5y=3$