Algebra lesson 10 quiz

1) i) Draw the following graphs on the same grid

a) $y = x^2$

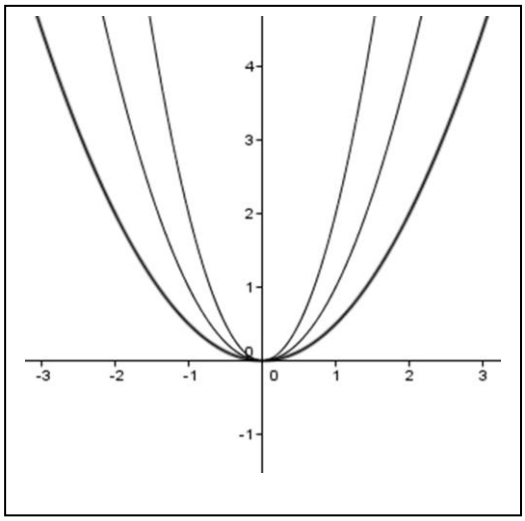
| X | -2 | -1 | 0 | 1 | 2 |
|---|---|---|---|---|---|
| Y | 4 | 1 | 0 | 1 | 4 |

b) $y = 2x^2$

| X | -2 | -1 | 0 | 1 | 2 |
|---|---|---|---|---|---|
| Y | 8 | 2 | 0 | 2 | 8 |

c) $y = 0.5x^2$

| X | -2 | -1 | 0 | 1 | 2 |
|---|---|---|---|---|---|
| Y | 2 | 0.5 | 0 | 0.5 | 2 |




ii) Describe what the coefficient $a$ does in the formula $y = ax^2$

Specifies the horizontal dilation factor (how wide the graph is)

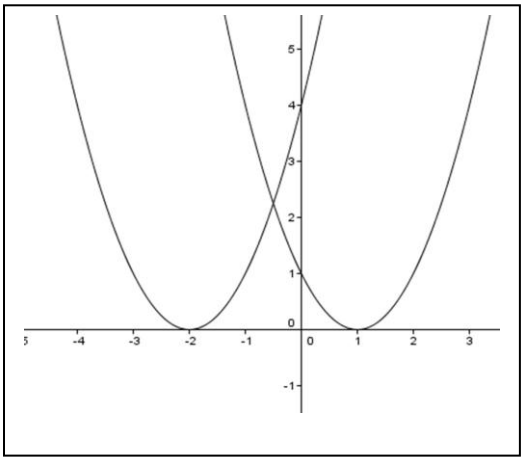
2) i) Draw the following graphs on the same grid:

a) $y = (x - 1)^2$

| X | -1 | 0 | 1 | 2 | 3 |
|---|---|---|---|---|---|
| Y | 4 | 1 | 0 | 1 | 4 |

b) $y = (x + 2)^2$

| X | -4 | -3 | -2 | -1 | 0 |
|---|---|---|---|---|---|
| Y | 4 | 1 | 0 | 1 | 4 |




ii) Describe what the constant $b$ does in the formula $y = (x - b)^2$

Specifies the horizontal translation of the graph.

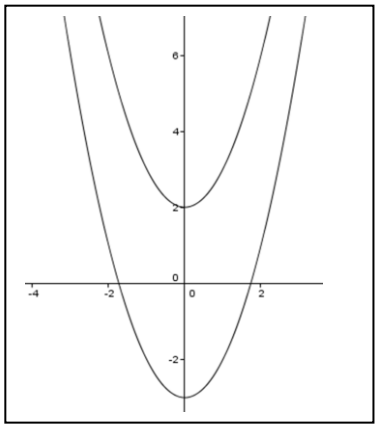
3) i) Draw the following equations on the same grid

a. $y = x^2 + 2$

| X | -2 | -1 | 0 | 1 | 2 |
|---|---|---|---|---|---|
| Y | 6 | 3 | 2 | 3 | 6 |

b. $y = x^2 - 3$

| X | -2 | -1 | 0 | 1 | 2 |
|---|---|---|---|---|---|
| Y | 1 | -2 | -3 | -2 | 1 |



ii) Describe what the constant $c$ does in the formula $y = x^2 + c$

Defines the vertical translation of the graph

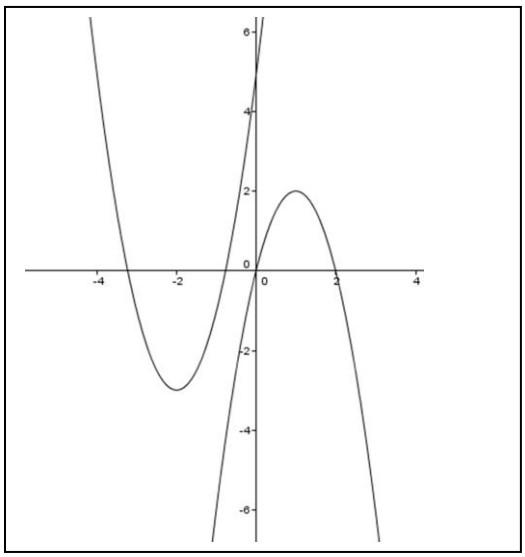
4) i) Draw the following equations on the same grid

a. $y = 2(x + 2)^2 - 3$

| X | -4 | -3 | -2 | -1 | 0 |
|---|---|---|---|---|---|
| Y | 5 | -1 | -3 | -1 | 5 |

b. $y = -2(x - 1)^2 + 2$

| X | -1 | 0 | 1 | 2 | 3 |
|---|---|---|---|---|---|
| Y | -6 | 0 | 2 | 0 | -6 |



c. From the general formula $y = a(x - b)^2 + c$

- Describe the effects of $a, b$, and $c$
- Describe how to find the turning point of the graph from $b$ and $c$

$a$: horizontal dilation, reflection

$b$: horizontal translation

$c$: vertical translation

turning point: ($b$,$c$)