

Shifting of GraphsQ₂

1, Applet constructed

2, (a) $g(x) = (x+3)^2$ The graph of $g(x)$ is shifted 3 units to the left side from original position.(b) $g(x) = x^2 + 3$ The graph of $g(x)$ is shifted 3 units vertically upwards from origin.3, (i) $a = 3, b = -2$ The graph of $g(x)$ is shifted vertically downwards by 2 units and horizontally to the left side by 3 units

$$g(x) = (x+3)^2 - 2$$

(ii) $a = -2, b = -3, g(x) = (x-2)^2 - 3$ (iii) $a = 1, b = 3, g(x) = (x+1)^2 + 3$ 4, (i) $b = 2, a$ is any real number

$$g(x) = x^2 + 2 \text{ where } a = 0, b = 2$$

(ii) $b = -4, a$ is any real number

$$g(x) = x^2 - 4$$

(iii) $b = 3, a$ is any real number

$$g(x) = x^2 + 3$$

5, $-f(x)$ 