4.

Solution

Quadratic function: is a function that can be written in the form:

$g(d)=ad^2+bd+c$ where a, b, and c are real numbers and $a\neq 0$

we have $g(d)=-2d^2-6d+4$, note: $-2d^2-6d+4$ is in dg-plane

Here, we know that $a=-2$, $b=-6$, $c=4$

Since $a<0$,we know that the g-coordinate of the vertex is a maximum.However,to find the g-coordinate of our vertex we first need to find the d-coordinate of the vertex by using $d=-\frac{b}{2a}=-\frac{-6}{-4}=-\frac{3}{2}$ Now that we have the d-coordinate, we can find the g-coordinate of the vertex by finding $g\left(-\frac{3}{2}\right)=-2\left(-\frac{3}{2}\right)^2-6\left(-\frac{3}{2}\right)+4=-\frac{9}{2}+9+4=\frac{17}{2}$ Maximum$=\frac{17}{2}$