#37 $f(x) = 2(x+1)^2 - 6$ is   a   parabola (graph)

match $\nearrow$ with $f(x) = a(x-h)^2 + k$

$h = -1$

$k = -6$

$a = 2 \quad > 0 \quad$ hence $\quad \circlearrowleft$

So $f(x)$ has absolute minimum.

The vertex is (h, k) or $(-1, -6)$

Hence, the $\boxed{\text{absolute minimum is } -6.}$

#38 $f(x) = -4x^2 + 2x + 4$ also has   a parabola graph

match $\nearrow$ with $f(x) = ax^2 + bx + c$

$a = -4 \quad < 0 \quad$ hence $\quad \curvearrowright$

So $f(x)$ has absolute maximum.

The vertex x-coord. can be found by $\dfrac{-b}{2a}$

$x = \dfrac{-b}{2a} = \dfrac{-2}{2 \cdot (-4)} = \dfrac{1}{4}$

Let's find y-coordinate: $y = f\left(\tfrac{1}{4}\right) = -4\left(\tfrac{1}{4}\right)^2 + 2 \cdot \tfrac{1}{4} + 4$

$= -4 \cdot \dfrac{1}{16} + \dfrac{2}{4} + 4 = -\dfrac{1}{4} + \dfrac{2}{4} + 4 = \dfrac{1}{4} + 4 = 4.25$

Hence, the $\boxed{\text{absolute maximum of } f(x) \text{ is } 4.25}$