$$
y=x^{2}+6 x+8 \quad \text { Review of Chapter } 6
$$

Solve

$$
\begin{aligned}
& \text { Quadratic forinula, } \\
& a=1, b=6, c=8 \\
& x=\frac{-6 \pm \sqrt{36-4(1) \times 8})}{261)} \\
& x=\frac{-6 \pm \sqrt{4}}{2}=-\frac{6 \pm 2}{2} \\
& x=-\frac{4}{2}=-2 \\
& x=-\frac{8}{2}=-4
\end{aligned}
$$

+ calculate the
zeros.

Graph the Quadratic
$y=x^{2}+6 x+8$

$$
\begin{aligned}
& y=x^{2}+6 x+8 \\
& x=\frac{-b}{2 a} \text { vertex: }(-3-1) \\
& x=\frac{-6}{2(1)}=-3 \quad \begin{array}{l}
y=(-3)^{2}+6(-3)+8 \\
y=9-18+8 \\
y=-1
\end{array}
\end{aligned}
$$

Avis: $x=-3$
Lint: $(0, c)=(0,8)$


$$
\left\{\begin{array}{l}
y=a(x-h)^{2}+k \\
y=x^{2}+6 x+8 \\
y=\left(x^{2}+6 x+9\right)+8-9 \\
y=(x+3)^{2}-1
\end{array}\right.
$$

$$
\begin{aligned}
& \text { vertex: }(h, k)=-3,-1) \\
& \text { Axis: } x=h, x=-2
\end{aligned}
$$

$$
\begin{aligned}
& \text { Axis: } x=h, x=-3 \\
& \text { direction: ais }
\end{aligned}
$$

$$
\begin{aligned}
& \text { direction:aisf) up }
\end{aligned}
$$

$$
\begin{aligned}
& \begin{array}{l|l}
\begin{array}{l}
\text { Factor } \\
y=x^{2}+6 x+8 \\
y=(x+2)(x+4) \\
0=(x+2)(x+4) \\
x+2=0 \\
x=-4 \\
x
\end{array} & x=0 \\
x=-2 & x=-4) \\
\text { Dots =xinterapts = zeros } \\
\text { = Solutions } \\
\text { Complete Square }
\end{array} \\
& \begin{array}{l}
x^{2}+6 x+8=0 \\
x^{2}+6 x+\frac{9}{2}=-8+9 \\
\sqrt{(x+3)^{2}}=\sqrt{1} \\
x+3= \pm 1 \\
x=-3 \pm 1=-2 \\
\end{array} \\
& \begin{array}{l}
x^{2}+6 x+8=0 \\
x^{2}+6 x+\frac{9}{2}=-8+9 \\
\sqrt{(x+3)^{2}}=\sqrt{1} \\
x+3= \pm 1 \\
x=-3 \pm 1-2
\end{array} \\
& \begin{array}{l}
x^{2}+6 x+8=0 \\
x^{2}+6 x+\frac{9}{2}=-8+9 \\
\sqrt{(x+3)^{2}}=\sqrt{1} \\
x+3= \pm 1 \\
x=-3 \pm 1-2
\end{array}
\end{aligned}
$$

