Solving Quadratic Equations using Completing the Square.

$$
\begin{gathered}
\left(x^{2}+10 x\right)+4=0 \quad \begin{array}{c}
\text { (1) Complete } \\
\text { the square. }
\end{array} \\
\begin{array}{c}
\left(x^{2}+10 x+25\right)-25+4=0 \\
+21+21
\end{array} \begin{array}{c}
(x+5)^{2}-21=0 \quad \begin{array}{c}
\text { (2) isolate the } \\
\text { birachet }
\end{array} \\
\sqrt{(x+5)^{2}}=\sqrt{21} \\
x+5= \pm \sqrt{21} \quad \text { (means }+\sqrt{21} \text { on } \\
-5 \\
x=-5 \pm \sqrt{21} \\
=-5+\sqrt{21} \\
0 r
\end{array} \\
=-5-\sqrt{21}
\end{gathered}
$$

$$
\begin{aligned}
& \text { Solve by Completing the Square } \\
& \text { (1) } x^{2}-8 x+13=0 \quad x=4 \pm \sqrt{3} \\
& \text { (2) } 3 x^{2}+6 x+1=0 \quad x=-1 \pm \sqrt{3 / 2} \\
& \text { (3) }-2 x^{2}+4 x+3=0 \\
& x=1 \pm \sqrt{5 / 2}
\end{aligned}
$$

$$
2 \underline{x^{2}}+8=0
$$

$$
\frac{2}{2} x^{2}=\frac{8}{2}
$$

$$
x^{2}=4
$$

$$
x= \pm 2
$$

$$
\begin{aligned}
& x-3= \pm 2 \\
& \begin{array}{rlrl}
x-3 & =2 \\
& \text { or } & \text { or } & x-3=-2 \\
+3
\end{array} \\
& x=5 \text { or } x=1
\end{aligned}
$$

(1) $x^{2}-64=0$
(y) $(x+2)^{2}=9$
(2) $\frac{1}{3} t^{2}-1=11$
(5) $\left(d+\frac{1}{2}\right)^{2}=1$
(3) $-y^{2}+5=-6$
(6) $(x+4)^{2}=18$

New Purple Sheet
Assignment:

$$
\operatorname{Pg} 240-2424.3 \# 7,9
$$

