$$
\begin{aligned}
& 11-12-13 \\
& 1^{\text {st }} 6 e 0
\end{aligned}
$$

Equation we use

$$
y-y_{1}=m\left(x-x_{1}\right)
$$

(1) Give the equation in SIG that goes through $\left(\begin{array}{l}x_{1}, x_{i} \\ 2,7)\end{array}\right.$ and has a slope of 5 .

$$
\begin{aligned}
& y-y_{1}=m\left(x-x_{1}\right) \\
& y-7=5(x-2) \\
& y-7=5 x-10 \\
&+7+7 \\
& y=5 x-3
\end{aligned}
$$

(2) Give the equation in SIF then goes through $(2,-6)$ and hes a slope of -5 .

$$
\begin{gathered}
y-y_{1}=m\left(x-x_{1}\right) \\
y--6=-5(x-2) \\
y+6=-5 x+10 \\
\frac{-6}{y}=-5 x+4
\end{gathered}
$$

(3) Give the equation in SIf the $t$ goes through

$$
\begin{gathered}
(2,5) \text { and }\left(4, \frac{15)}{x_{1}, y_{0}}\right. \\
\text { Slope }=\frac{\Delta y}{\Delta x}=\frac{15-5}{4-2}=\frac{10}{2}=5 \\
y-y_{1}=m\left(x-x_{1}\right) \\
y-5=5(x-2) \\
y-5=5 x-10 \\
\begin{array}{c}
y+5 \\
+5
\end{array} \\
y=5 x-5
\end{gathered}
$$

(4) Gise the equation in SIF that gues through $(1,7)$ and (2,10).

$$
\begin{aligned}
& \text { slope }=\frac{\Delta y}{\Delta x}=\frac{10-1}{2-1}=\frac{3}{1}=3 \\
& y-y_{1}=m\left(x-x_{1}\right) \\
& y-7=3(x-1) \\
& y-7=3 x-3 \\
&+7+7 \\
& y=3 x+4
\end{aligned}
$$


(5) Give the equation in SIG

$$
\begin{aligned}
& \text { Give the equation }(2,4) \\
& \text { that goes through }(2)
\end{aligned}
$$

and is parallel to $y=\frac{3 x-1}{}=3$.

$$
\begin{aligned}
y-y_{1} & =m\left(x-x_{1}\right) \\
y-4 & =3(x-2) \\
y-4 & =3 x-6 \\
+4 & \text { slope is } 3
\end{aligned}
$$

(6) Give the equation in SIF that is perpendicular to

$$
\begin{aligned}
& y=\frac{1}{2} x+3 \text { and goes through }(2,8) \\
& m=\frac{1}{2} \\
& \therefore m=-2 \\
& y-y_{1}=m\left(x-x_{1}\right) \\
& y-8=-2(x-2) \\
& y-8=-2 x+4 \\
& +8 \quad+8 \\
& y=-2 x+12
\end{aligned}
$$

(7) Give the equation in $S I G$
that goes through $(1,8)$
and is parallel to $y=3 x-2$.

$$
\begin{gathered}
y-y_{1}=m\left(x-x_{1}\right) \\
y-8=3(x-1) \\
y-8=3 x-3 \\
+8 \quad+8 \\
\hline y=3 x+5
\end{gathered}
$$

