Answers $\sim$ Exercise 6-FacZoring.
1.

$$
\begin{array}{cc}
x^{2}-3 x+2=0 & 2 \cdot x^{2}-x-6=0 \\
(x-2)(x-1)=0 & (x-3)(x+2)=0 \\
x-2=0 \text { or } x-1=0 & x-3=0 \text { or } x+2=0 \\
x=2 \text { or } x=1 & x=3 \text { or } x=-2
\end{array}
$$

3. 

$$
\begin{array}{ll}
p^{2}+2 p-35=0 & \text { 4. } m^{2}-7 m=18 \\
(p+7)(p-5)=0 & m^{2}-7 m-18=0 \\
p+7=0 \text { or } p-5=0 & (m-9)(m+2)=0 \\
p=-7 \text { or } p=5 & m-9=0 \text { or } m+2=0 \\
& m=9 \text { or } m=-2
\end{array}
$$

5. 

$$
\begin{gathered}
2 a^{2}+3 a-2=0 \quad(\text { Decomposition) } \\
\left(2 a^{2}+4 a\right)(-1 a-2)=0 \quad \text { Multiply } \rightarrow-4 \\
2 a(a+2)-1(a+2)=0 \\
(a+2)(2 a-1)=0 \\
a+2=0 \quad \text { or } \quad 2 a-1=0 \\
a=-2 \quad \quad \begin{array}{l}
2 a \\
7
\end{array} \quad=\frac{1}{2} \\
a=\frac{1}{2}
\end{gathered}
$$

6. 

$$
\begin{aligned}
& 3 s^{2}-4 s+1=0 \quad \text { (Decomposition). } \\
& \left.\left(3 s^{2}-3 s\right)-1 s+1\right)=0 \\
& 3 s(s-1)-1(s-1)=0 \\
& s-1=0 \text { or } 3 s-1=0 \\
& S=1 \quad \frac{8 s}{8}=\frac{1}{3} \\
& s=\frac{1}{3} \\
& \text { multiply } \rightarrow 3 \text { Add } \rightarrow-4 \text {. }
\end{aligned}
$$

$$
\text { 7. } \begin{aligned}
& 2 t^{2}+11 t+5=0 \quad \text { (Decomposition) } \\
& \begin{array}{c}
\left(2 t^{2}+10 t\right)(t+1 t+5)
\end{array}=0 \quad \text { Multiply } \rightarrow 10 \quad \text { Add } \rightarrow 11 \\
& 2(t+5)+1(t+5)=0 \\
&(t+5)(2 t+1)=0 \\
& t+5=0 \text { or } 2 t+1=0 \\
& t=-5 \quad \frac{x t}{x}=\frac{-1}{2} \\
& t=\frac{-1}{2}
\end{aligned}
$$

8. 

$$
\begin{aligned}
& 3 x^{2}+7 x-6=0 \\
& \text { (Decomposition). } \\
& \left(3 x^{2}+9 x-2 x-6\right)=0 \\
& 3 x(x+3)-2(x+3)=0 \\
& (x+3)(3 x-2)=0 \\
& x+3=0 \text { or } 3 x-2=0 \\
& x=-3 \quad \frac{B x}{3}=\frac{2}{3} \\
& x=\frac{2}{3}
\end{aligned}
$$

9. 

$$
\begin{array}{ll}
4 m^{2}-4 m-3=0 & \text { (Decomposition) } \\
\left(4 m^{2}+2 m\right)(-6 m-3)=0 & \text { Multiply } \rightarrow-12 \text { Adc } \\
2 m(2 m+1)-3(2 m+1)=0 & \\
(2 m+1)(2 m-3)=0 & \\
2 m+1=0 \text { or } \quad 2 m-3=0 \\
2 m=\frac{-1}{2} \quad 2 \frac{2 m}{2}=\frac{3}{2} \\
m=\frac{1}{2} \quad 2 & m=\frac{3}{2}
\end{array}
$$

10. 

$$
\begin{aligned}
& 10 y^{2}-16 y=-6 \\
& 10 y^{2}-16 y+6=0 \quad \text { (Decomposition) } \\
& \left(10 y^{2}-10 y\right)(-6 y+6)=0 \\
& 10 y(y-1)-6(y-1)=0 \\
& (y-1)(10 y-6)=0 \\
& \begin{aligned}
y-r & =0 & \text { or } 10 y-6 & =0 \\
y & =1 & & 0
\end{aligned} \\
& y=1 \quad 1 \varnothing y=\frac{6}{10} \\
& y=\frac{6}{10} \\
& y=\frac{3}{5} \text { (lowest terms!) }
\end{aligned}
$$

11. 

$$
\begin{aligned}
& x^{2}+2 x=0 \quad \text { (Common Factor) } \\
& x(x+2)=0 \\
& x=0 \text { or } x+2=0 \\
& x=-2
\end{aligned}
$$

12. 

$$
\begin{aligned}
& y^{2}-3 y=0 \\
& y\left(y-\frac{3}{3}\right)=0 \\
& y=0 \text { or } y-3=0 \\
& y=3
\end{aligned}
$$

(Common Factor)
13.

$$
\begin{aligned}
3 m^{2}+2 m & =0 \quad(\text { (amon Factor }) \\
m(3 m+2) & =0 \\
m=0 \text { or } 3 m+2 & =0 \\
\frac{8 m}{8} & =-\frac{2}{3} \\
m & =-\frac{2}{3}
\end{aligned}
$$

$$
\text { 14. } \begin{aligned}
5 n^{2}-8 n & =0 \quad \quad \quad \text { (ommon Factor) } \\
n(5 n-8) & =0 \\
n=0 \text { or } 5 n-8 & =0 \\
\frac{\$ n}{5} & =\frac{8}{5} \\
n & =\frac{8}{5}
\end{aligned}
$$

