4. $\left(\frac{4 x^{-3} y^{2}}{x y^{-5}}\right)^{-2}=\frac{4^{-2} x^{6} y^{-4}}{x^{-2} y^{10}}=4^{-2} x^{8} y^{-14}$

5. $\left(3 x^{4}+4 x^{3}-32 x^{2}-5 x-20\right)(x+4)^{-1}$

| -4 | 3 | -32 | -5 | -20 |
| ---: | ---: | ---: | ---: | ---: |
| $\downarrow$ | -12 | 32 | 0 | 20 |
| 3 | -8 | 0 | -5 | 0 |

$$
3 x^{3}-8 x^{2}-5
$$

$$
\begin{aligned}
& \text { 23. } \frac{12 x^{4}-20 x^{3}+9 x+35}{3 x-5} \\
& 3 x-5 \sqrt{12 x^{3}+3+\frac{50}{3 x-5}} \\
& \Leftrightarrow \frac{17 x^{4}-20 x^{3}+0 x^{2}+9 x+35}{3 x^{3}+2 x^{2}+9 x+35} \\
& (-1) \frac{12 x^{4}}{3 x}=4 x^{3} \\
& 50 \\
& \frac{9 x}{3 x}=3
\end{aligned}
$$

9. $\left(4 x^{2}-3 y^{2}+5 x y\right)-\left(8 x y+3 y^{2}\right)$

$$
\frac{4 x^{2}-3 y^{2}+5 x y}{4 x^{2}-6 y^{2}-3 x y}-\frac{8 x y}{2}
$$

$$
\begin{aligned}
& \text { 17. }\left(n^{2}+5\left(16+1\left(2 n^{2}-3\right)\right.\right. \\
& 2 n^{4}-3 n^{2}+10 n^{3}-15 n+2 n^{2}-3 \\
& 2 n^{4}+10 n^{3}-n^{2}-15 n-3
\end{aligned}
$$

(56) $\left(2 x y^{3}\right)\left(-3 x^{-1} y^{-3}\right)=-6 x^{0} y^{0}=-6$
2. $2 x^{2}\left(6 y^{3}\right)\left(2 x^{2} y\right)$

$$
2 \cdot 6 \cdot 2 x^{2} \cdot x^{2} \quad y^{3} \cdot y
$$

$$
\text { 19. } \begin{aligned}
& \frac{24 m n^{6}-40 m^{2} n^{3}}{4 m^{2} n^{3}} \\
& \frac{24 m n^{6}}{4 m^{2} n^{3}}-\frac{40 m^{2} n^{3}}{4 m^{2} n^{3}} \\
& 6 m^{-1} n^{3}-10 m^{0} n^{0} \\
& \frac{6 n^{3}}{m}-10
\end{aligned}
$$

