

Name

Date

perdo d

7.10

Dividing polynomials.

$$\begin{array}{r} 1) \quad c \overline{) c^2 - c - 1} \\ \underline{-c^2} \\ -c - 1 \\ \underline{+c} \\ -1 \\ \underline{-1} \\ 0 \end{array}$$

$$\begin{array}{r} 2) \quad j^2 \overline{) j^4 - 4j^3 - 8j^2} \\ \underline{-j^4} \\ -4j^3 - 8j^2 \\ \underline{+4j^3} \\ -8j^2 \\ \underline{+8j^2} \\ 0 \end{array}$$

$$\begin{array}{r}
 3) \quad 3p^2 \overline{) \frac{p-9}{3p^3 - 27p^2}} \\
 \underline{+ 3p^3} \\
 - 27p^2 \\
 \underline{+ 27p^2} \\
 0
 \end{array}$$

$$\begin{array}{r}
 4) \quad 2m \overline{) \frac{m - \frac{5}{2} + \frac{1}{m}}{2m^2 - 5m + 2}} \\
 \underline{+ 2m^2} \\
 - 5m + 2 \\
 \underline{+ 5m} \\
 2 \\
 \underline{+ 2} \\
 0
 \end{array}$$

$$\begin{array}{r}
 5) \quad 4x^3 \overline{) \frac{\frac{7x}{4} - 7}{7x^4 - 28x^3}} \\
 \underline{+ 7x^4} \\
 - 28x^3 \\
 \underline{+ 28x^3} \\
 0
 \end{array}$$

$$6) \quad \begin{array}{r} \overline{2d^4 \sqrt{-52d^4 - 32d^3 - 43d^2 + 48d}} \\ -104d^4 \\ \hline \end{array}$$

$$\begin{array}{r} -64d^7 - 86d^6 + 96d^5 \\ \pm 64d^7 \quad \pm 86d^6 \\ \hline \end{array}$$

$$\begin{array}{r} 96d^5 \\ -96d^5 \\ \hline 0 \end{array}$$

$$7) \quad \begin{array}{r} \overline{39^2 \sqrt{-99^2 + 179 - 3}} \\ -279^4 \\ \hline \end{array}$$

$$\begin{array}{r} 519^3 - 99^2 \\ \pm 519^3 \\ \hline \end{array}$$

$$\begin{array}{r} -99^2 \\ \pm 99^2 \\ \hline 0 \end{array}$$

8)

$$\begin{array}{r}
 -11y^{24} \sqrt{\begin{array}{r} -y^2 + 12y - 11 \\ 11y^{26} - 132y^{25} + 121y^{24} \\ \hline -11y^{24} \\ \hline -132y^{25} + 121y^{24} \\ \hline -132y^{25} \\ \hline 121y^{24} \\ \hline -121y^{24} \\ \hline 0 \end{array}}
 \end{array}$$

9)

$$\begin{array}{r}
 p+1 \sqrt{\begin{array}{r} p^2 + 3p + 2 \\ \hline -p^2 + 1p \\ \hline 2p + 2 \\ \hline -2p - 2 \\ \hline 0 \end{array}}
 \end{array}$$

$p^2 + 3p + 2$
 $(p+1)(p+2)$

10)

$$\begin{array}{r}
 x+4 \sqrt{\begin{array}{r} x^2 + 7x + 12 \\ \hline -x^2 + 4x \\ \hline 3x + 12 \\ \hline -3x - 12 \\ \hline 0 \end{array}}
 \end{array}$$

$x^2 + 7x + 12$
 $(x+4)(x+3)$

$$\begin{array}{r}
 11) \quad 2a+1 \quad \sqrt{\begin{array}{r} 10a-4 \\ 20a^2+2a-4 \\ -20a^2+10a \\ \hline -8a-4 \\ +8a+4 \\ \hline 0 \end{array}}
 \end{array}$$

$$\begin{array}{r}
 12) \quad t+4 \quad \sqrt{\begin{array}{r} 4t-16 \\ 4t^2-64 \\ -4t^2+16t \\ \hline -16t-64 \\ +16t+64 \\ \hline 0 \end{array}}
 \end{array}$$

$$\begin{array}{r}
 13) \quad z-3 \quad \sqrt{\begin{array}{r} z+3 \\ z^2-9 \\ -z^2+3z \\ \hline 3z-9 \\ +3z+9 \\ \hline 0 \end{array}}
 \end{array}$$

$$14) (3a^2 - 5 - 10a) \div (2 + 3a)$$

$$\textcircled{a - 4 + \frac{3}{3a+2}}$$

$$3a + 2 \sqrt{\begin{array}{r} 3a^2 - 10a - 5 \\ - 3a^2 \quad + 2a \\ \hline \end{array}}$$

$$\begin{array}{r} -12a - 5 \\ +12a + 8 \\ \hline \end{array}$$

$$\textcircled{x^2 - 3x + 8} \quad 3$$

$$15) x + 5 \sqrt{x^3 + 8x^2 + 23x + 40}$$

$$\begin{array}{r} - x^3 + 5x^2 \\ \hline \end{array}$$

$$\begin{array}{r} -3x^2 + 23x + 40 \\ +3x^2 + 15x \\ \hline \end{array}$$

$$\begin{array}{r} 8x + 40 \\ -8x + 40 \\ \hline 0 \end{array}$$

$$\textcircled{x^2 - 3x + 8} \quad \checkmark$$

16)

$$(54 + 27y^3 - 8) \div (-8 + 3y)$$

$$\begin{array}{r} 3y-8 \overline{) 27y^3 + 54 - 8} \\ \underline{27y^3 + 72y^2} \\ 72y^2 + 54 - 8 \end{array}$$

$$\begin{array}{r} \underline{72y^2 + 192y} \\ 197y - 8 \end{array}$$

$$\begin{array}{r} \underline{197y + 157.6} \\ 1552 \end{array}$$

$$\begin{array}{r} 197y - 8 \quad -2y \\ \underline{197y + 157.6} \quad \frac{-2y}{3} \\ 1552 \end{array}$$

$$\frac{1552}{3}$$