24B

1) $X + 6$

$$\begin{array}{r} X + 6 \\ \times\ X + 6 \\ \hline 6X + 36 \\ X^2 + 6X \\ \hline X^2 + 12X + 36 \end{array}$$

2) $X + 7$

$$\begin{array}{r} X + 7 \\ \times\ X + 7 \\ \hline 7X + 49 \\ X^2 + 7X \\ \hline X^2 + 14X + 49 \end{array}$$

3) $2X + 1$

$$\begin{array}{r} 2X + 1 \\ \times\ 2X + 1 \\ \hline 2X + 1 \\ 4X^2 + 2X \\ \hline 4X^2 + 4X + 1 \end{array}$$

4)
$$\begin{array}{r} X + 7 \\ X + 3 \overline{)\ X^2 + 10X + 21} \\ -(X^2 + 3X) \\ \hline 7X + 21 \\ -(7X + 21) \\ \hline 0 \end{array}$$

Check

$$\begin{array}{r} X + 7 \\ \times\ X + 3 \\ \hline 3X + 21 \\ X^2 + 7X \\ \hline X^2 + 10X + 21 \end{array}$$

5)
$$\begin{array}{r} X + 5 \\ X + 2 \overline{)\ X^2 + 7X + 10} \\ -(X^2 + 2X) \\ \hline 5X + 10 \\ -(5X + 10) \\ \hline 0 \end{array}$$

Continue to check by multiplying.

6)
$$\begin{array}{r} X + 6 \\ X + 1 \overline{)\ X^2 + 7X + 6} \\ -(X^2 + X) \\ \hline 6X + 6 \\ -(6X + 6) \\ \hline 0 \end{array}$$

7)
$$\begin{array}{r} X + 5 \\ X + 3 \overline{)\ X^2 + 8X + 15} \\ -(X^2 + 3X) \\ \hline 5X + 15 \\ -(5X + 15) \\ \hline 0 \end{array}$$

8)
$$\begin{array}{r} X + 5 \\ X + 4 \overline{)\ X^2 + 9X + 20} \\ -(X^2 + 4X) \\ \hline 5X + 20 \\ -(5X + 20) \\ \hline 0 \end{array}$$

9)
$$\begin{array}{r} X + 3 \\ X - 2 \overline{)\ X^2 + X - 6} \\ -(X^2 - 2X) \\ \hline 3X - 6 \\ -(3X - 6) \\ \hline 0 \end{array}$$

10)
$$\begin{array}{r} X^2 - 3X + 5 \\ X - 2 \overline{)\ X^3 - 5X^2 + 11X - 10} \\ -(X^3 - 2X^2) \\ \hline -3X^2 + 11X \\ -(-3X^2 + 6X) \\ \hline 5X - 10 \\ -(5X - 10) \\ \hline 0 \end{array}$$

11)
$$\begin{array}{r} X^2 + 4X - 7 \text{ R } 5 \\ X - 3 \overline{)\ X^3 + X^2 - 19X + 26} \\ -(X^3 - 3X^2) \\ \hline 4X^2 - 19X \\ -(4X^2 - 12X) \\ \hline -7X + 26 \\ -(-7X + 21) \\ \hline 5 \end{array}$$

24C

1)
$$\begin{array}{r} 4X + 6 \text{ R } -5 \\ X + 1 \overline{)\ 4X^2 + 10X + 1} \\ -(4X^2 + 4X) \\ \hline 6X + 1 \\ -(6X + 6) \\ \hline -5 \end{array}$$

2)
$$\begin{array}{r} 4X + 6 \\ \times\ X + 1 \\ \hline 4X + 6 \\ 4X^2 + 6X \\ \hline 4X^2 + 10X + 6 \\ -5 \\ \hline 4X^2 + 10X + 1 \end{array}$$

3)
$$\begin{array}{r} 2X + 2 \text{ R } 3 \\ 2X + 1 \overline{)\ 4X^2 + 6X + 5} \\ -(4X^2 + 2X) \\ \hline 4X + 5 \\ -(4X + 2) \\ \hline 3 \end{array}$$

4)
$$\begin{array}{r} 2X + 2 \\ \times\ 2X + 1 \\ \hline 2X + 2 \\ 4X^2 + 4X \\ \hline 4X^2 + 6X + 2 \\ +3 \\ \hline 4X^2 + 6X + 5 \end{array}$$

5)
$$\begin{array}{r} X + 5 \\ X + 4 \overline{)\ X^2 + 9X + 20} \\ -(X^2 + 4X) \\ \hline 5X + 20 \\ -(5X + 20) \\ \hline 0 \end{array}$$

6)
$$\begin{array}{r} X + 4 \\ \times\ X + 5 \\ \hline 5X + 20 \\ X^2 + 4X \\ \hline X^2 + 9X + 20 \end{array}$$

7) $X + 1$

8)
$$\begin{array}{r} X + 1 \\ \times\ X + 1 \\ \hline X + 1 \\ X^2 + X \\ \hline X^2 + 2X + 1 \end{array}$$

9) $X^{12}Y^{12}Y^2 = X^{12}Y^{14}$

10) $A^{5+3} = A^8$

11) $X^{5-2-(-4)} = X^7$

12) $\frac{2X}{Y} - \frac{3X\cancel{Y}}{\cancel{Y^2}} + \frac{4}{XY} =$

$\frac{2X}{Y} - \frac{3X}{Y} + \frac{4}{XY} = \frac{-X}{Y} + \frac{4}{XY}$ or

$\frac{4 - X^2}{XY}$ (Using common denominator to add)

13) .04914

14) 3600

15) 63

16) $|-3| = 3$

17) $7X^2 + 2X + 1$

18) $2X^2 - 17$

19) 1, 97

20) addition, multiplication

24D

1)
$$\begin{array}{r} 2X - 3 \text{ R } 13 \\ X + 1 \overline{)\ 2X^2 - X + 10} \\ -(2X^2 + 2X) \\ \hline -3X + 10 \\ -(-3X - 3) \\ \hline 13 \end{array}$$

2)
$$\begin{array}{r} 2X - 3 \\ \times\ X + 1 \\ \hline 2X - 3 \\ 2X^2 - 3X \\ \hline 2X^2 - X - 3 \\ +13 \\ \hline 2X^2 - X + 10 \end{array}$$

3)
$$\begin{array}{r} 3X + 2 \\ X + 3 \overline{)\ 3X^2 + 11X + 6} \\ -(3X^2 + 9X) \\ \hline 2X + 6 \\ -(2X + 6) \\ \hline 0 \end{array}$$

4)
$$\begin{array}{r} 3X + 2 \\ \times\ X + 3 \\ \hline 9X + 6 \\ 3X^2 + 2X \\ \hline 3X^2 + 11X + 6 \end{array}$$

5)
$$\begin{array}{r} 3X - 2 \text{ R } -1 \\ X + 4 \overline{)\ 3X^2 + 10X - 9} \\ -(3X^2 + 12X) \\ \hline -2X - 9 \\ -(-2X - 8) \\ \hline -1 \end{array}$$

6)
$$\begin{array}{r} 3X - 2 \\ \times\ X + 4 \\ \hline 12X - 8 \\ 3X^2 - 2X \\ \hline 3X^2 + 10X - 8 \\ -1 \\ \hline 3X^2 + 10X - 9 \end{array}$$

7) $X + 4$

8)
$$\begin{array}{r} X + 4 \\ \times\ X + 4 \\ \hline 4X + 16 \\ X^2 + 4X \\ \hline X^2 + 8X + 16 \end{array}$$

9) $A^{(5)(-2)}B^{(7)(-2)}B^{(3)(-2)}A^4 =$
$A^{-10}B^{-14}B^{-6}A^4 = A^{-6}B^{-20}$

10) $B^4A^{-1}B^2 = A^{-1}B^6$

11) .879

12) 50

13) -16

14) $|-3| = 3$

15) $5X^2 + 7X + 5$

16) $2X^2 + 3X - 1$

17) 2 x 2 x 2 x 3 x 3 x 3

18) addition and multiplication

19) $24 \div 6 = 4$ hours

20) $24 \div 3 = 8$ hours