26B

1) $X^2(X^2 - 9)$
$X^2(X - 3)(X + 3)$

2) $3X(X^2 - 25)$
$3X(X - 5)(X + 5)$

3) $4X^2(X^2 - 1)$
$4X^2(X - 1)(X + 1)$

4) $5X(X^4 - 1)$
$5X(X^2 - 1)(X^2 + 1)$
$5X(X - 1)(X + 1)(X^2 + 1)$

5) $-2(X^2 + 8X + 15)$
$-2(X + 3)(X + 5)$

6) $3X(X^2 + 3X - 10)$
$3X(X + 5)(X - 2)$

7) $5X(X^2 - X - 6)$
$5X(X - 3)(X + 2)$

8) $X(X^2 + 11X + 30)$
$X(X + 6)(X + 5)$

9) $-4(X^2 + 7X + 10)$
$-4(X + 5)(X + 2)$

10) $-3X(X^2 + 8X + 12)$
$-3X(X + 6)(X + 2)$

11) $2X(X^2 - 4X - 5)$
$2X(X - 5)(X + 1)$

12) $X^3(5X^2 - X - 6)$
$X^3(5X - 6)(X + 1)$

13) $-3X(X^2 + 4X - 12)$
$-3X(X + 6)(X - 2)$

14) $X^2(X^2 + 3X - 4)$
$X^2(X + 4)(X - 1)$

15) $4X(X^2 - 9)$
$4X(X - 3)(X + 3)$

16) $2X^2(X^2 - 16)$
$2X^2(X - 4)(X + 4)$

26C

1) $(X^2 - 4)(X^2 + 4)$
$(X - 2)(X + 2)(X^2 + 4)$

2) $(10)^4 - 16 = (10 - 2)(10 + 2)(10^2 + 4)$
$9984 = (8)(12)(104)$
$9984 = 9984$

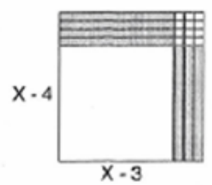
3) $(4X - 3)(4X + 3)$

4) $16(10)^2 - 9 = [\,4(10) - 3\,]\,[4(10) + 3\,]$
$1591 = (37)(43)$
$1591 = 1591$

5)
$$X + 2 \overline{)\,3X^2 - 2X - 9}\quad 3X - 8 \text{ R } 7$$
$-(3X^2 + 6X)$
$-8X - 9$
$-(-8X - 16)$
7

6)
$$\begin{array}{r} 3X - 8 \\ \times\ X + 2 \\ \hline 6X - 16 \\ 3X^2 - 8X \\ \hline 3X^2 - 2X - 16 \\ +\ 7 \\ \hline 3X^2 - 2X - 9 \end{array}$$

7) $X^2 - 7X + 12$



8)
$$\begin{array}{r} X - 3 \\ \times\ X - 4 \\ \hline -4X + 12 \\ X^2 - 3X \\ \hline X^2 - 7X + 12 \end{array}$$

9)
$$\begin{array}{r} 75 \\ \times 75 \\ \hline 5625 \end{array}$$

10)
$$\begin{array}{r} 41 \\ \times 49 \\ \hline 2009 \end{array}$$

11) $2(X^2 + 2X + 1)$
$2(X + 1)(X + 1)$

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

12) $6(X^2 - 100)$
$6(X - 10)(X + 10)$

$$\begin{array}{r} X - 10 \\ \times\ X + 10 \\ \hline 10X - 100 \\ X^2 - 10X \\ \hline X^2 - 100 \end{array}$$

13) $3Q = (7)(6)$
$3Q = 42$
$Q = 14$

14) $(2)(36) = (9)(X)$
$72 = 9X$
$8 = X$

15) $15 = 250Q - 440$
$455 = 250Q$
$1.82 = Q$

16) $-4X + 5X = 43 + 16$
$X = 59$

17) $4 \times 10^4 + 9 \times 10^3 + 7 \times 10^2 + 3 \times 10^0$

18) $.01 + .0005 = .0105$

19) $12(N + 1) + 4(N) = 9(N + 2) + 8$
$12N + 12 + 4N = 9N + 18 + 8$
$7N = 14$
$N = 2 \qquad 2, 3, 4$

20) $(2X)(A + 4) + (3)(A + 4) =$
$(2AX + 8X) + (3A + 12)$

26D

1) $X(X^2 - 9)$
$X(X - 3)(X + 3)$

2) $(10)^3 - 9(10) = 10(10 - 3)(10 + 3)$
$910 = 10(7)(13)$
$910 = 910$

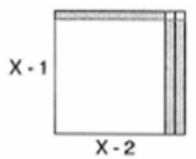
3) $(X^2 - 9)(X^2 + 9)$
$(X - 3)(X + 3)(X^2 + 9)$

4) $(10)^4 - 81 = (10 - 3)(10 + 3)(10^2 + 9)$
$9919 = (7)(13)(109)$
$9919 = 9919$

5)
$$X - 3 \overline{)\,2X^2 - 7X - 8}\quad 2X - 1 \text{ R } -11$$
$-(2X^2 - 6X)$
$-X - 8$
$-(-X + 3)$
-11

6)
$$\begin{array}{r} 2X - 1 \\ \times\ X - 3 \\ \hline -6X + 3 \\ 2X^2 - X \\ \hline 2X^2 - 7X + 3 \\ -11 \\ \hline 2X^2 - 7X - 8 \end{array}$$

7) $X^2 - 3X + 2$



8)
$$\begin{array}{r} X - 1 \\ \times\ X - 2 \\ \hline -2X + 2 \\ X^2 - X \\ \hline X^2 - 3X + 2 \end{array}$$

9)
$$\begin{array}{r} 95 \\ 95 \\ \hline 9025 \end{array}$$

10)
$$\begin{array}{r} 24 \\ 26 \\ \hline 624 \end{array}$$

11) $5(X^2 - 9)$
$5(X - 3)(X + 3)$

$$\begin{array}{r} X - 3 \\ \times\ X + 3 \\ \hline 3X - 9 \\ X^2 - 3X \\ \hline X^2 - 9 \end{array}$$

12) $4(X^2 - 81)$
$4(X - 9)(X + 9)$

$$\begin{array}{r} X - 9 \\ \times\ X + 9 \\ \hline -9X - 81 \\ X^2 + 9X \\ \hline X^2 - 81 \end{array}$$

13) $(4)(110) = 11P$
$440 = 11P$
$40 = P$

14) $(5)(15) = 8C$
$75 = 8C$
$9\ 3/8 = C$

15) $-5Y + 3 = 8Y - 4$ (after dividing all terms by 10B)
$3 + 4 = 8Y + 5Y$
$7 = 13Y$
$7/13 = Y$

16) $207 - 90X = 500X + 83$
$124 = 590X$
$62/295 = X$

17) $.25Q + .10D = 2.30 \qquad Q + D = 14$

$$\begin{array}{r} 25Q + 10D = 230 \\ -10Q - 10D = -140 \\ \hline 15Q \quad = \quad 90 \end{array}$$

$Q = 6 \qquad (6) + D = 14$
$D = 8$

18) $4.2 \times 180 = 756$ miles

19) $180 - 30 = 150$ mph
$756 \div 150 = 5.04$ hours

20) $(X + A)(C + B) =$
$(X)(C + B) + (A)(C + B)$