

20A

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



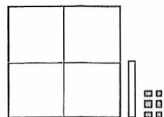
2)  $X^2 + 6X + 8$



3)  $X^2 - 8$



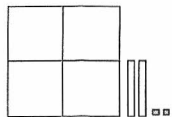
4)  $\begin{array}{r} X^2 - 6X + 3 \\ 3X^2 + 7X - 9 \\ \hline 4X^2 + X - 6 \end{array}$



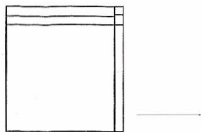
5)  $\begin{array}{r} X^2 - 8 \\ X^2 + 6X - 7 \\ \hline 2X^2 + 6X - 15 \end{array}$



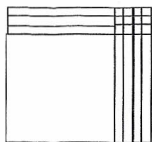
6)  $\begin{array}{r} 2X^2 + 10X + 7 \\ 2X^2 - 8X - 9 \\ \hline 4X^2 + 2X - 2 \end{array}$



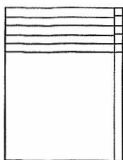
7)  $(X + 1)(X + 2) = X^2 + 3X + 2$



8)  $(X + 4)(X + 3) = X^2 + 7X + 12$



9)  $(X + 1)(X + 5) = X^2 + 6X + 5$



10)  $\begin{array}{r} 3X + 2 \\ x \quad X + 1 \\ \hline 3X + 2 \end{array}$

$$\begin{array}{r} 3X^2 + 2X \\ 3X^2 + 5X + 2 \end{array}$$

11)  $\begin{array}{r} 5X + 5 \\ x \quad X + 2 \\ \hline 10X + 10 \\ 5X^2 + 5X \\ \hline 5X^2 + 15X + 10 \end{array}$

12)  $\begin{array}{r} 2X + 1 \\ x \quad X + 5 \\ \hline 10X + 5 \\ 2X^2 + X \\ \hline 2X^2 + 11X + 5 \end{array}$

13)  $\begin{array}{r} X + 8 \\ x \quad 3X + 5 \\ \hline 5X + 40 \\ 3X^2 + 24X \\ \hline 3X^2 + 29X + 40 \end{array}$

14)  $\begin{array}{r} X + 3 \\ x \quad 2X + 1 \\ \hline X + 3 \\ 2X^2 + 6X \\ \hline 2X^2 + 7X + 3 \end{array}$

15)  $\begin{array}{r} 3X + 2 \\ x \quad 2X + 1 \\ \hline 3X + 2 \\ 6X^2 + 4X \\ \hline 6X^2 + 7X + 2 \end{array}$

16)  $\begin{array}{r} 4X + 2 \\ x \quad X + 3 \\ \hline 12X + 6 \\ 4X^2 + 2X \\ \hline 4X^2 + 14X + 6 \end{array}$

17)  $\begin{array}{r} 2X - 5 \\ x \quad X + 2 \\ \hline 4X - 10 \\ 2X^2 - 5X \\ \hline 2X^2 - X - 10 \end{array}$

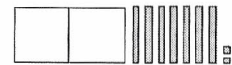
18)  $\begin{array}{r} 3X + 5 \\ x \quad 3X - 1 \\ \hline -3X - 5 \\ 9X^2 + 15X \\ \hline 9X^2 + 12X - 5 \end{array}$

20B

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



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



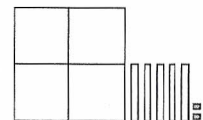
3)  $X^2 + 5X + 9$



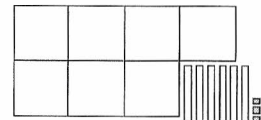
4)  $\begin{array}{r} X^2 + 3X + 2 \\ X^2 + 7X + 12 \\ \hline 2X^2 + 10X + 14 \end{array}$



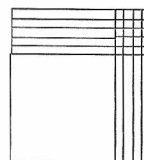
5)  $\begin{array}{r} X^2 + 6X + 5 \\ 3X^2 - X - 2 \\ \hline 4X^2 + 5X + 3 \end{array}$



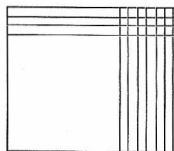
6)  $\begin{array}{r} 5X^2 - 5X - 10 \\ 2X^2 + 11X + 5 \\ \hline 7X^2 + 6X - 5 \end{array}$



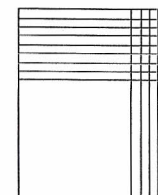
7)  $(X + 4)(X + 5) = X^2 + 9X + 20$



8)  $(X + 7)(X + 3) = X^2 + 10X + 21$



9)  $(X + 4)(X + 8) = X^2 + 12X + 32$



10)  $\begin{array}{r} 7X + 1 \\ x \quad X + 2 \\ \hline 14X + 2 \end{array}$

$$\begin{array}{r} 7X^2 + X \\ 7X^2 + 15X + 2 \end{array}$$

11)  $\begin{array}{r} 3X + 7 \\ x \quad X + 6 \\ \hline 18X + 42 \\ 3X^2 + 7X \\ \hline 3X^2 + 25X + 42 \end{array}$

12)  $\begin{array}{r} 2X + 8 \\ x \quad 3X + 1 \\ \hline 2X + 8 \\ 6X^2 + 24X \\ \hline 6X^2 + 26X + 8 \end{array}$

13)  $\begin{array}{r} X + 8 \\ x \quad X - 3 \\ \hline -3X - 24 \\ X^2 + 8X \\ \hline X^2 + 5X - 24 \end{array}$

14)  $\begin{array}{r} 2X - 1 \\ x \quad X + 9 \\ \hline 18X - 9 \\ 2X^2 - X \\ \hline 2X^2 + 17X - 9 \end{array}$

15)  $\begin{array}{r} 3X + 5 \\ x \quad X + 2 \\ \hline 6X + 10 \\ 3X^2 + 5X \\ \hline 3X^2 + 11X + 10 \end{array}$

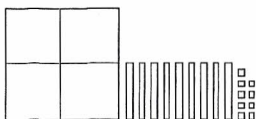
16)  $\begin{array}{r} 4X - 2 \\ x \quad X - 3 \\ \hline -12X + 6 \\ 4X^2 - 2X \\ \hline 4X^2 - 14X + 6 \end{array}$

17)  $\begin{array}{r} 5X + 2 \\ x \quad 3X - 3 \\ \hline -15X - 6 \\ 15X^2 + 6X \\ \hline 15X^2 - 9X - 6 \end{array}$

18)  $\begin{array}{r} 3X + 7 \\ x \quad 4X + 2 \\ \hline 6X + 14 \\ 12X^2 + 28X \\ \hline 12X^2 + 34X + 14 \end{array}$

20C

$$\begin{array}{r} 1) \quad 3X^2 + 7X + 6 \\ \quad X^2 + 2X + 3 \\ \hline 4X^2 + 9X + 9 \end{array}$$



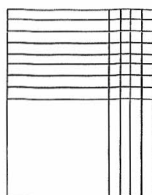
$$\begin{array}{r} 2) \quad 2X^2 + 5X + 1 \\ \quad X^2 + 3X + 4 \\ \hline 3X^2 + 8X + 5 \end{array}$$



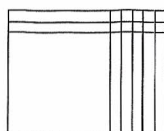
$$\begin{array}{r} 3) \quad 4X^2 + 8X + 2 \\ \quad -X^2 + 3X - 1 \\ \hline 3X^2 + 11X + 1 \end{array}$$



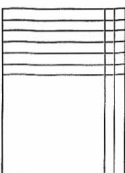
$$4) \quad (X+4)(X+8) = X^2 + 12X + 32$$



$$5) \quad (X+5)(X+2) = X^2 + 7X + 10$$



$$6) \quad (X+2)(X+6) = X^2 + 8X + 12$$



$$\begin{array}{r} 7) \quad \begin{array}{r} 3X + 6 \\ \times \quad X + 2 \\ \hline 6X + 12 \\ 3X^2 + 6X \\ \hline 3X^2 + 12X + 12 \end{array} \end{array}$$

$$\begin{array}{r} 8) \quad \begin{array}{r} 2X + 5 \\ \times \quad X + 3 \\ \hline 6X + 15 \\ 2X^2 + 5X \\ \hline 2X^2 + 11X + 15 \end{array} \end{array}$$

$$\begin{array}{r} 9) \quad \begin{array}{r} 4X - 5 \\ \times \quad X + 1 \\ \hline 4X - 5 \\ 4X^2 - 5X \\ \hline 4X^2 - X - 5 \end{array} \end{array}$$

$$10) \quad X^4$$

$$11) \quad \frac{1}{X^3}$$

$$12) \quad 5^{2-4} = 5^{-2} \text{ (Remember that } 3^0 = 1.)$$

$$13) \quad A^{4-7} = A^{-3}$$

$$14) \quad 5^{2-5} = 5^{-3}$$

$$15) \quad (5^3)^4$$

$$16) \quad +14, -14$$

$$17) \quad C^{-5+2} = C^{-3}$$

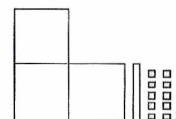
$$\begin{array}{r} 18) \quad \begin{array}{r} X + 4 \\ \times \quad X + 5 \\ \hline 5X + 20 \\ X^2 + 4X \\ \hline X^2 + 9X + 20 \end{array} \end{array}$$

$$19) \quad A = (6)^2 + 9(6) + 20 = 36 + 54 + 20 \\ A = 110 \text{ sq. units}$$

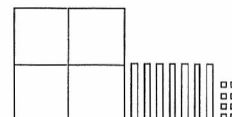
$$\begin{array}{r} 20) \quad \begin{array}{r} 2(X+4) \Rightarrow 2X + 8 \\ 2(X+5) \Rightarrow 2X + 10 \\ \hline 20X + 80 \\ 4X^2 + 16X \\ \hline 4X^2 + 36X + 80 \end{array} \end{array}$$

20D

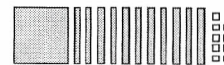
$$\begin{array}{r} 1) \quad \begin{array}{r} X^2 - 3X - 7 \\ 2X^2 + 4X - 4 \\ \hline 3X^2 + X - 11 \end{array} \end{array}$$



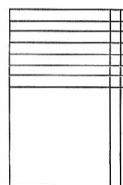
$$\begin{array}{r} 2) \quad \begin{array}{r} X^2 + 11X + 2 \\ 3X^2 - 4X + 6 \\ \hline 4X^2 + 7X + 8 \end{array} \end{array}$$



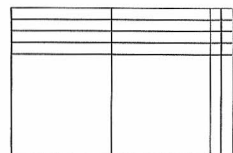
$$\begin{array}{r} 3) \quad \begin{array}{r} X^2 - 10X - 5 \\ -2X^2 - X + 14 \\ \hline -X^2 - 11X + 9 \end{array} \end{array}$$



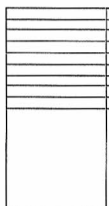
$$4) \quad (X+2)(X+7) = X^2 + 9X + 14$$



$$5) \quad (2X+3)(X+4) = 2X^2 + 11X + 12$$



$$6) \quad (X+1)(X+9) = X^2 + 10X + 9$$



$$\begin{array}{r} 7) \quad \begin{array}{r} 2X + 4 \\ \times \quad X + 3 \\ \hline 6X + 12 \\ 2X^2 + 4X \\ \hline 2X^2 + 10X + 12 \end{array} \end{array}$$

$$\begin{array}{r} 8) \quad \begin{array}{r} 3X - 1 \\ \times \quad X + 4 \\ \hline 12X - 4 \\ 3X^2 - X \\ \hline 3X^2 + 11X - 4 \end{array} \end{array}$$

$$\begin{array}{r} 9) \quad \begin{array}{r} 2X - 3 \\ \times \quad X - 4 \\ \hline -8X + 12 \\ 2X^2 - 3X \\ \hline 2X^2 - 11X + 12 \end{array} \end{array}$$

$$10) \quad X^{-4}$$

$$11) \quad Y^5$$

$$12) \quad 3^{743-2} = 3^{741}$$

$$13) \quad B^{5-1} = B^4$$

$$14) \quad 8^{3-6} = 8^{-3}$$

$$15) \quad (2^3)^5$$

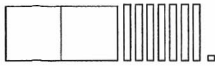
$$16) \quad +15, -15$$

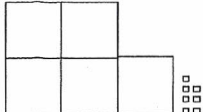
$$17) \quad D^{8-7-3} = D^{-2}$$

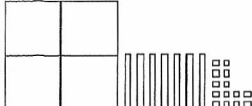
$$\begin{array}{r} 18) \quad \begin{array}{r} 2X + 4 \\ \times \quad X + 4 \\ \hline 8X + 16 \\ 2X^2 + 4X \\ \hline 2X^2 + 12X + 16 \end{array} \end{array}$$

$$19) \quad A = 2(10)^2 + 12(10) + 16 = 200 + 120 + 16 \\ A = 336 \text{ sq. units}$$

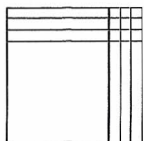
$$\begin{array}{r} 20) \quad \begin{array}{r} 2X^2 + 12X + 16 \\ X^2 + 3X + 1 \\ \hline 3X^2 + 15X + 17 \end{array} \end{array}$$

$$1) \frac{X^2 + 3X - 2}{X^2 + 4X + 3} = \frac{2X^2 + 7X + 1}{2X^2 + 7X + 1}$$


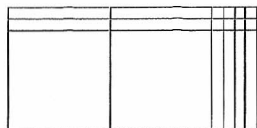
$$2) \frac{3X^2 + 2X - 1}{2X^2 - 2X + 8} = \frac{5X^2 + 7}{5X^2 + 7}$$


$$3) \frac{5X^2 + 4X + 7}{4X^2 + 7X + 14} = \frac{4X^2 + 7X + 14}{4X^2 + 7X + 14}$$


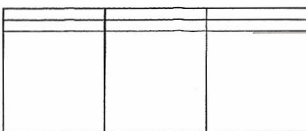
$$4) (X+3)(X+3) = X^2 + 6X + 9$$



$$5) (2X+4)(X+2) = 2X^2 + 8X + 8$$



$$6) (3X)(X+2) = 3X^2 + 6X$$



$$7) \frac{2X - 3}{X - 2} = \frac{-4X + 6}{-4X + 6} = \frac{2X^2 - 3X}{2X^2 - 7X + 6}$$

$$8) \frac{X - 1}{X - 6} = \frac{-6X + 6}{-6X + 6} = \frac{X^2 - X}{X^2 - 7X + 6}$$

$$9) \frac{2X + 2}{X - 3} = \frac{-6X - 6}{-6X - 6} = \frac{2X^2 + 2X}{2X^2 - 4X - 6}$$

$$10) X^{-5}$$

$$11) \frac{1}{Y^2}$$

$$12) 7^{-2+5}(-2) = 7^5$$

$$13) A^7B^{-3}$$

$$14) 5^{2 \cdot 5} = 5^{10}$$

$$15) (5^3)^4$$

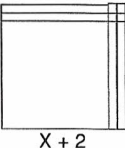
$$16) +13, -13$$

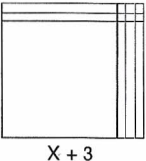
$$17) C^{-4+3}D^{-3+8-7} = C^{-1}D^{-2}$$

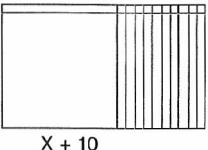
$$18) \frac{3N + 4}{2N + 5} = \frac{5N + 9}{5N + 9}$$

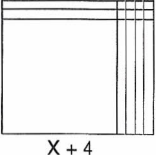
$$19) 5(10) + 9 = \$59$$

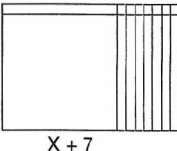
$$20) \frac{2Y + 7}{7Y + 5} = \frac{10Y + 35}{10Y + 35} = \frac{14Y^2 + 49Y}{14Y^2 + 59Y + 35}$$

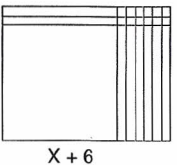
$$1) \frac{X + 2}{X + 2} = \frac{X + 2}{X + 2} = \frac{2X + 4}{2X + 4} = \frac{X^2 + 2X}{X^2 + 4X + 4}$$


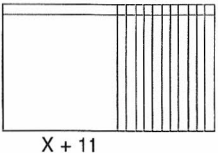
$$2) \frac{X + 3}{X + 2} = \frac{X + 3}{X + 2} = \frac{2X + 6}{2X + 6} = \frac{X^2 + 3X}{X^2 + 5X + 6}$$


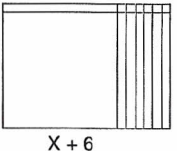
$$3) \frac{X + 10}{X + 10} = \frac{X + 10}{X + 10} = \frac{X + 10}{X + 10} = \frac{X^2 + 10X}{X^2 + 11X + 10}$$


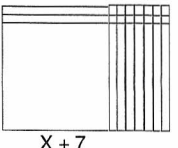
$$4) \frac{X + 4}{X + 2} = \frac{X + 4}{X + 2} = \frac{2X + 8}{2X + 8} = \frac{X^2 + 4X}{X^2 + 6X + 8}$$


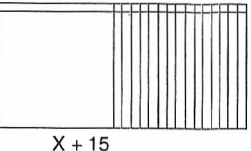
$$5) \frac{X + 7}{X + 7} = \frac{X + 7}{X + 7} = \frac{X + 7}{X + 7} = \frac{X^2 + 7X}{X^2 + 8X + 7}$$


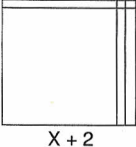
$$6) \frac{X + 6}{X + 2} = \frac{X + 6}{X + 2} = \frac{2X + 12}{2X + 12} = \frac{X^2 + 6X}{X^2 + 8X + 12}$$


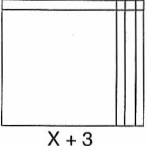
$$7) \frac{X + 11}{X + 11} = \frac{X + 11}{X + 11} = \frac{X + 11}{X + 11} = \frac{X^2 + 11X}{X^2 + 12X + 11}$$


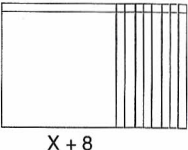
$$8) \frac{X + 6}{X + 6} = \frac{X + 6}{X + 6} = \frac{X + 6}{X + 6} = \frac{X^2 + 2X}{X^2 + 7X + 6}$$


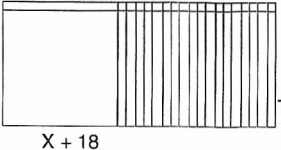
$$9) \frac{X + 7}{X + 7} = \frac{X + 7}{X + 7} = \frac{2X + 14}{2X + 14} = \frac{X^2 + 7X}{X^2 + 9X + 14}$$


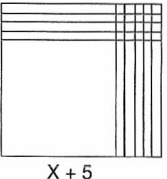
$$10) \frac{X + 15}{X + 15} = \frac{X + 15}{X + 15} = \frac{X + 15}{X + 15} = \frac{X^2 + 15X}{X^2 + 16X + 15}$$


$$11) \frac{X + 2}{X + 2} = \frac{X + 2}{X + 2} = \frac{X + 2}{X + 2} = \frac{X^2 + 2X}{X^2 + 3X + 2}$$


$$12) \frac{X + 3}{X + 3} = \frac{X + 3}{X + 3} = \frac{X + 3}{X + 3} = \frac{X^2 + 3X}{X^2 + 4X + 3}$$


$$13) \frac{X + 8}{X + 8} = \frac{X + 8}{X + 8} = \frac{X + 8}{X + 8} = \frac{X^2 + 8X}{X^2 + 9X + 8}$$


$$14) \frac{X + 18}{X + 18} = \frac{X + 18}{X + 18} = \frac{X + 18}{X + 18} = \frac{X^2 + 18X}{X^2 + 19X + 18}$$


$$15) \frac{X + 5}{X + 5} = \frac{X + 5}{X + 5} = \frac{4X + 20}{4X + 20} = \frac{X^2 + 5X}{X^2 + 9X + 20}$$


$$16) \frac{X + 7}{X + 7} = \frac{X + 7}{X + 7} = \frac{3X + 21}{3X + 21} = \frac{X^2 + 7X}{X^2 + 10X + 21}$$
