

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



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



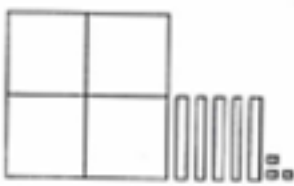
3)  $X^2 + 5X + 9$



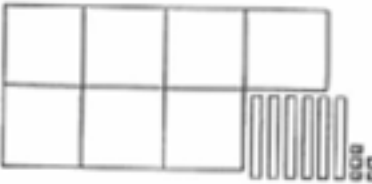
4)  $\frac{X^2 + 3X + 2}{X^2 + 7X + 12}$   
 $\frac{2X^2 + 10X + 14}{7X^2 + 6X - 5}$



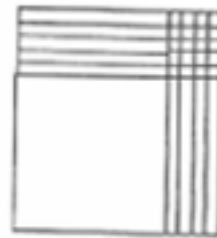
5)  $\frac{X^2 + 6X + 5}{3X^2 - X - 2}$   
 $\frac{4X^2 + 5X + 3}{7X^2 + 6X - 5}$



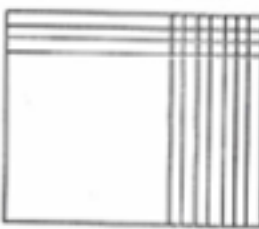
6)  $\frac{5X^2 - 5X - 10}{2X^2 + 11X + 5}$   
 $\frac{7X^2 + 6X - 5}{7X^2 + 6X - 5}$



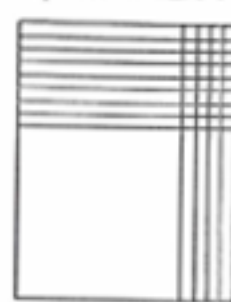
7)  $(X + 4)(X + 5) = X^2 + 9X + 20$



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



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



10)  $\frac{7X + 1}{X + 2}$   
 $\frac{14X + 2}{7X^2 + X}$   
 $\frac{7X^2 + 15X + 2}{7X^2 + 15X + 2}$

11)  $\frac{3X + 7}{X + 6}$   
 $\frac{18X + 42}{3X^2 + 7X}$   
 $\frac{3X^2 + 25X + 42}{3X^2 + 25X + 42}$

12)  $\frac{2X + 8}{3X + 1}$   
 $\frac{6X^2 + 24X}{6X^2 + 26X + 8}$

13)  $\frac{X + 8}{X - 3}$   
 $\frac{-3X - 24}{X^2 + 8X}$   
 $\frac{X^2 + 5X - 24}{X^2 + 5X - 24}$

14)  $\frac{2X - 1}{X + 9}$   
 $\frac{18X - 9}{2X^2 - X}$   
 $\frac{2X^2 + 17X - 9}{2X^2 + 17X - 9}$

15)  $\frac{3X + 5}{X + 2}$   
 $\frac{6X + 10}{3X^2 + 5X}$   
 $\frac{3X^2 + 11X + 10}{3X^2 + 11X + 10}$

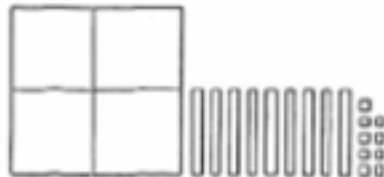
16)  $\frac{4X - 2}{X - 3}$   
 $\frac{-12X + 6}{4X^2 - 2X}$   
 $\frac{4X^2 - 14X + 6}{4X^2 - 14X + 6}$

17)  $\frac{5X + 2}{3X - 3}$   
 $\frac{-15X - 6}{15X^2 + 6X}$   
 $\frac{15X^2 - 9X - 6}{15X^2 - 9X - 6}$

18)  $\frac{3X + 7}{4X + 2}$   
 $\frac{6X + 14}{12X^2 + 28X}$   
 $\frac{12X^2 + 34X + 14}{12X^2 + 34X + 14}$

20C

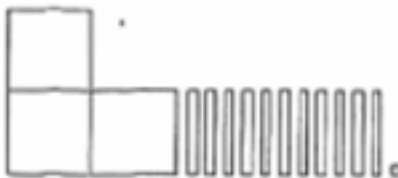
1)  $\frac{3X^2 + 7X + 6}{X^2 + 2X + 3}$   
 $\frac{4X^2 + 9X + 9}{4X^2 + 9X + 9}$



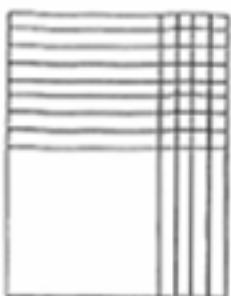
2)  $\frac{2X^2 + 5X + 1}{X^2 + 3X + 4}$   
 $\frac{3X^2 + 8X + 5}{3X^2 + 8X + 5}$



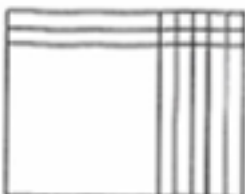
3)  $\frac{4X^2 + 8X + 2}{-X^2 + 3X - 1}$   
 $\frac{3X^2 + 11X + 1}{3X^2 + 11X + 1}$



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



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



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



7)  $\frac{3X + 6}{X + 2}$   
 $\frac{6X + 12}{3X^2 + 6X}$   
 $\frac{3X^2 + 12X + 12}{3X^2 + 12X + 12}$

8)  $\frac{2X + 5}{X + 3}$   
 $\frac{6X + 15}{2X^2 + 5X}$   
 $\frac{2X^2 + 11X + 15}{2X^2 + 11X + 15}$

9)  $\frac{4X - 5}{X + 1}$   
 $\frac{4X - 5}{4X^2 - 5X}$   
 $\frac{4X^2 - X - 5}{4X^2 - X - 5}$

10)  $X^4$

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

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

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

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

15)  $(5^3)^4$

16)  $+14, -14$

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

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

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

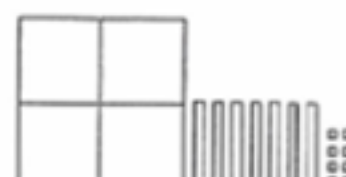
20)  $\frac{2(X + 4)}{2(X + 5)} \Rightarrow \frac{2X + 8}{2X + 10}$   
 $\frac{20X + 80}{4X^2 + 16X}$   
 $\frac{4X^2 + 36X + 80}{4X^2 + 36X + 80}$

20D

1)  $\frac{X^2 - 3X - 7}{2X^2 + 4X - 4}$   
 $\frac{3X^2 + X - 11}{3X^2 + X - 11}$



2)  $\frac{X^2 + 11X + 2}{3X^2 - 4X + 6}$   
 $\frac{4X^2 + 7X + 8}{4X^2 + 7X + 8}$



3)  $\frac{X^2 - 10X - 5}{-2X^2 - X + 14}$   
 $\frac{-X^2 - 11X + 9}{-X^2 - 11X + 9}$



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



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



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



7)  $\frac{2X + 4}{X + 3}$   
 $\frac{6X + 12}{2X^2 + 4X}$   
 $\frac{2X^2 + 10X + 12}{2X^2 + 10X + 12}$

8)  $\frac{3X - 1}{X + 4}$   
 $\frac{12X - 4}{3X^2 - X}$   
 $\frac{3X^2 + 11X - 4}{3X^2 + 11X - 4}$

9)  $\frac{2X - 3}{X - 4}$   
 $\frac{-8X + 12}{2X^2 - 3X}$   
 $\frac{2X^2 - 11X + 12}{2X^2 - 11X + 12}$

10)  $X^{-4}$

11)  $Y^5$

12)  $3^{7-4-2} = 3^{-1}$

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

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

15)  $(2^3)^5$

16)  $+15, -15$

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

18)  $\frac{2X + 4}{X + 4}$   
 $\frac{8X + 16}{2X^2 + 4X}$   
 $\frac{2X^2 + 12X + 16}{2X^2 + 12X + 16}$

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

20)  $\frac{2X^2 + 12X + 16}{X^2 + 3X + 1}$   
 $\frac{3X^2 + 15X + 17}{3X^2 + 15X + 17}$