

THE ENTRANCE.

Dr.			Bank.	Cr.		
June 18	To Cash	513 25	June 18	By cheque	150 00	
" 20	"	1400 00	" 21	"	1415 00	
" 21	"	200	" 22	balance	548 25	
		2113 25			2113 25	

Dr.			Jones, Gowan & Co.	Cr.		
June 22	To balance	536 00	June 18	By goods	536 00	
		536 00			536 00	

Dr.			J. P. Wilson.	Cr.		
June 20	To mdse	33 00	June 22	By loss	24 00	
			" 22	" cash	8 00	
		32 00			32 00	

STATEMENT OF ASSETS AND LIABILITIES.

	Dr.	Cr.
Cash, balance in safe	703	
Bills rec., balance as per bill book	850	
W. P. Patterson, balance due from him	35 75	
Bank, balance in it	548 25	
Mdse, balance on hand	2500 00	
Interest accrued on bills receivable	41 10	
Rent, paid in advance	141 85	
Jones, Gowan & Co., balance due to them		536 00
Present net worth		4283 95
	4819 95	4819 95

STATEMENT OF LOSSES AND GAINS.

Net investment	\$4800 00
Net worth	4283 95
Net loss	\$ 516 05

Algebra.

In factoring trinomials you will notice that if the last sign is + then the signs of the factors are alike, that is each is + or each is -. A look then at the first sign will decide what the signs are; if it is + both are +, if it is - both are -.

For instance, to factor $x^2 + 7x + 12$. The last sign is + then the signs of the factors are either each + or each -. We then look at the first sign; it is +, therefore they are each +. Now what two numbers multiplied will give 12, and added will give 7. The answers are 3 and 4. Therefore the factors are $(x+3)(x+4)$.

But if the last sign is - then the signs of the factors are different, that is, one is + and the other -. A look then at the first sign will decide what the signs are; if it is + then the larger number is +, if it is - then the larger number is -.

For instance, to factor $x^2 + x - 12$, we see the signs are not alike and that the large number is +. We then ask what number multiplied will give -12 and added will give +1. The answer is -3 and +4. The factors then are $(x-3)(x+4)$.

To factor $2x^2 + x - 28$ we factor 2 into 2 and 1; we then factor 28 into 7 and 4, then arrange them with signs such that the middle term will become +1. Thus $2-7$ 1+4. You see here that by multiplying +1 and -7 and +2 and +4 and adding the result we get +1.

EXERCISE I.

Do not be satisfied until you can read the factors of these at sight.

- $72x^2 - 145x + 72$.
- $2 - 3x - 2x^2$.
- $7 + 10x + 3x^2$.
- $20 - 9x - 20x^2$.
- $4 - 5x - 6x^2$.
- $18 - 33x + 5x^2$.
- $24 + 37x - 72x^2$.
- $x^2y^2 + 23xy - 420$.
- $7x^2 - 19x - 6$.
- $14x^2 + 29x - 15$.
- $1 - 100a^6b^4c^2$.
- $81p^2q^6 - 25b^2$.
- $p^2q^2 - 64a^4$.
- $a^2b^4c^6 - x^{16}$.
- $36x^{36} - 49a^{14}$.
- $121a^2 - 81x^2$.
- $36a^4 - 49x^4$.
- $49 - 100k^2$.
- $9a^4 - 121$.
- $16x^{16} - 9y^6$.

EXERCISE II.

- $2x^2 + 3x + 1$.
- $5x^2 + 11x + 2$.
- $2x^2 - x - 1$.
- $3x^2 + 13x - 30$.
- $4x^2 + x - 14$.
- $12x^2 - 23xy + 10y^2$.
- $15x^2 - 77x + 10$.
- $24x^2 - 29xy - 4y^2$.
- $3 + 11x - 4x^2$.
- $8 + 6x - 5x^2$.
- $2x^2 + 9x + 4$.
- $3x^2 + 7x - 6$.
- $3x^2 + 23x + 14$.
- $2x^2 - 5xy - 3y^2$.
- $3x^2 + 11x + 6$.
- $6x^2 - 31x + 35$.
- $3x^2 + 41x + 26$.
- $8x^2 - 38x + 35$.
- $15x^2 + 224x - 15$.
- $12x^2 - 31x - 15$.

EXERCISE III.

It is thought this paper will be found useful for review at this stage of the work.

- If $b=2$, $c=4$, $d=6$, find the value of $3b + (2c-d) + \{3b - (2c-d)\} - \{3b - (2c-d)^2\}$.
- Reduce to its simplest form $1 - \{1 - (-4x)\} + \{2x - (3-5x)\} - \{2 - (-4+5x)\}$.
- Add $9(x^2 + y^2)$, $-3xy$, $x^2 - 7xy + y^2$, $10xy - 10(x^2 + y^2)$.
- From $4(a-b) + 3(x+y)$, take $3(a-b) - 5(x+y)$.
- Divide $8a^3 - b^3 + c^3 + 6abc$ by $2a - b + c$.
- Factor the following expressions:
(a) $2bc + b^2 + c^2 - a^2$.
(b) $(a-b)^2 - (c-d)^2$.
- Find the value of x in the equation $(x-5)^2 - (5-x)^2 + 10x(x-2) = (5x-8)(2x-1)$.
- Find the area of an oblong whose sides are respectively 9 feet greater and 6 feet less than those of a square equal to it.
- Six years hence a boy will be 4 times as old as he was 6 years ago. How old is he?
- Find 4 consecutive numbers whose sum is 222.
- Fred and Bob play at marbles. Fred begins with 16 and Bob with 12; after the game Fred has thrice as many as Bob. How many has he won?