0000000036066597   000005243

6879000
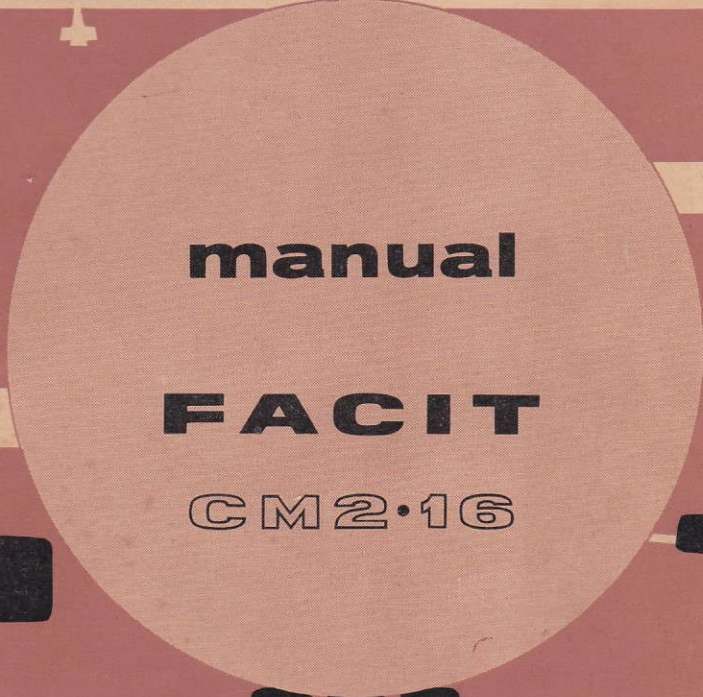
manual

FACIT

CM2·16

7 8 9

4 5 6

← → 1 2 3 ←16 ←11

0

CLINT

Table of contents

Examples

FACIT CM2·16

at your service…

Before you use Facit CM2-16, take time to read this guidebook carefully. Once you familiarize yourself with its operation, you will find that you can calculate more quickly and easily on the Facit CM2-16.

Like all other Facit calculators, the CM2-16 has a ten-key keyboard. One of its new features, however, is that the keys are in three rows—exactly as on an ordinary adding machine. The Facit CM2-16 has other plus features as well:

1) tens transmission throughout the product and multiplier registers will enable you to take short cuts in figuring, read off the results with greater speed, and assure you of 100 % accuracy;

2) computed results may be transferred directly from the product register or multiplier register to the setting register, saving you valuable time as you continue your figure work;

3) direct setting for division cuts down brainwork and steps up computing speed;

4) a fast clearing mechanism contributes greatly to higher speed of operation.

1
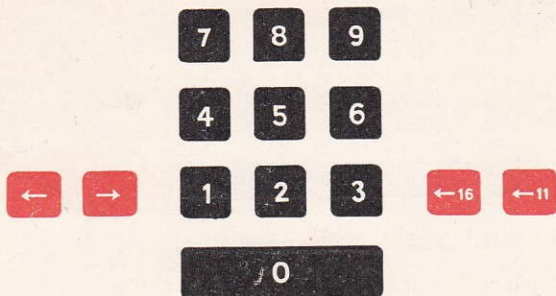
Positioning the fingers
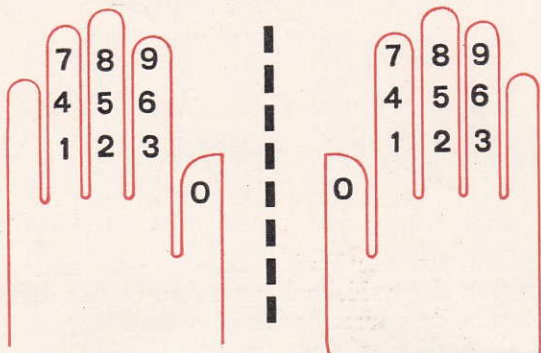
To do the work faster and more comfortably you should position your fingers in a certain way from the beginning. The picture illustrates which fingers to use in pressing down the setting keys for either left-hand or right-hand touch calculation.

Only **10** keys suffice

to perform all operations

All you do is set up the figures by depressing the appropriate setting keys in the order in which the figures appear in the number.
Example: Let's assume you are going to set up the number 1365. First you set up 1, then 3, 6 and 5 in that order. Every time you depress the key the corresponding figure will appear in the setting register.

1365

2

Addition
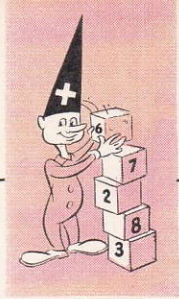
Example: $3478 + 394 + 85 + 8962 = ?$ Set up the first number, 3478. Make a forward, or plus, turn. The number is then transferred from the setting register to the product register, which will show .... `0000000000003478` Clear the setting register and proceed in the same way with the remaining three numbers.

The product register shows the answer (sum) to be `0000000000012919` The multiplier register records that you have added four numbers .... `000000004` In addition, the decimal point is placed in accordance with the instructions on page 13.

Clear all the registers when you have completed the calculation.

Subtraction

Example: 276543—80927 = ?

First set up the number, 276543. Make a forward turn so as to transfer the figures from the setting register to the product register.

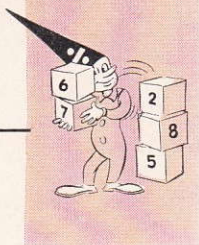Clear the setting register. Set up 80927 and make a minus turn. The product register shows the answer (remainder) to be .. `0000000000195616`

In subtraction, the decimal point is placed in accordance with the instructions on page 13.

Subtraction below zero

Example: 58923—93470+8463 = ?

Add and subtract in the usual manner but do not clear 8463 in the setting register.

The product register now shows .... `9999999999973916`

The nines to the left in the product register show that the number 73916 is negative.

Move the number 8463 four steps to the left with the shift key. (The first figure in the setting register should fall directly beneath the negative number, plus three 9's.) Pull the transfer lever towards you.

The setting register will now show `99973916`

Make a negative turn.

The product register shows .... `9999999900026084`

The 9's to the left in the product register indicate that the answer is a negative number, —26084.

Clear all the registers when you have completed the calculation.

4

Multiplication
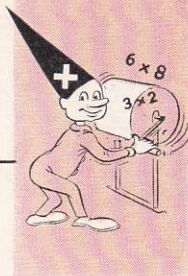
Example: 6943259×2043 = ?

Set up the *greater factor*, 6943259.

To multiply by 2043, first make three plus revolutions. The multiplier

register then shows .... `000000003`

and the product register

(6943259×3)= .... `0000000020829777`

Press the left-hand shift key [←] once. This will cause the calculating mechanism to move one step to the left, which is also recorded by the position indicator in the multiplier register. Make 4 plus turns. Now press the left-hand shift key [←] twice (past the figure 0 in the multiplier register) and make 2 plus turns. You have now completed the multiplication and can read the answer (product) in the product

register .... `0000014185078137`

The multiplier register now shows 2043 and the setting register 6943259 (plus a nought for every shift, in this case 3 noughts). In this way you are able to check that the correct multiplications have been carried out.

In multiplication, the decimal point is placed in accordance with the instructions on page 13.

Clear all the registers when you have completed the calculation.
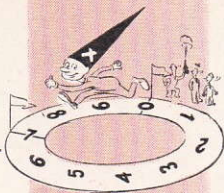
Multiplication

Short-cut multiplication

If the multiplier contains figures of a higher value than 5 (6, 7, 8 or 9), you can save as much as 40 % in time by using a short-cut method of multiplication. In the following example you need only turn the crank six times. To perform the multiplication in the usual manner would have required 18 turns.

Example: 758×819 = ?

Set up 758. Move the crank about an inch in the forward direction and then make a negative turn. The multiplier register will show a row of nines. With the first figure of the multiplier 819 already in the product register, you need only press the left-hand shift key ← once and make two positive turns to get the next figure, 1. Press the left-hand shift key ← and make two negative turns. However, the multiplication won't be finished until you press the left-hand shift key once again and make another positive turn to get rid of the remaining nines in the multiplier and product registers.

The product register now gives the answer: .. `0000000000620802`

Clear all the registers when you have completed the calculation.

6
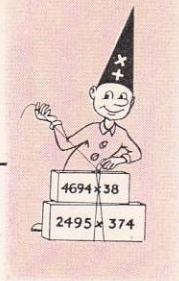
Multiplication

Multiplication involving addition of products

Example: 2495×374+4694×38 = ?

The multiplication 2495×374 is performed in the ordinary manner. The product register now shows .... `0000000000933130`
Clear the setting and multiplier registers only.
Multiply 4694 by 38. The second product is automatically added to the first one, with the product register showing the sum of the two multiplications, which is .... `0000000001111502`

Continuous multiplication

Example: 127×12×311 = ?

Multiply 127×12 in the ordinary manner. The product register shows `0000000000001524`
Check to see that the first figure in the setting register falls beneath the first figure in the product register, as is the case in this example. (If the product register contains more figures than the setting register, press the left-hand shift key ← as many times as needed to bring the first figures in line.) Now move the answer from the product to the setting register by moving the transfer lever forward. When the transfer lever is moved to bottom position the product and multiplier registers are cleared simultaneously.
Multiply 1524×311.
The answer in the product register is ....
`0000000000473964`

Clear all the registers when you have completed the calculation.
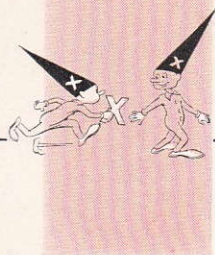
Multiplication

Example:

$(367+9124+461+81) \times 113 = ?$

Addition involving further multiplication of the sum

Add the four numbers in the ordinary manner. Do not clear the machine.

Your sum is ...... `0000000000010033`

Press the left-hand shift key ← three times, which will align the first figure of the setting register with the first figure of the product register. Move the transfer lever forward. The sum in the product register is then transferred to the setting register and appears in correct position for the following multiplication.

Multiply by 113.

The answer in the product register is ....

`0000000001133729`

Clear all the registers when you have completed the calculation.
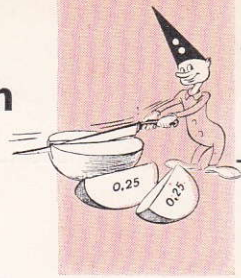
Division

Example: 9955128 ÷ 302 = ?

Set up the dividend 9955128. Press the tabulator ←16. Transfer the number to the product register by a forward turn, then clear the setting and multiplier registers.

The division operation now proceeds as follows: Set up the divisor 302 with the setting keys. Move the number to the extreme left by pressing the tabulator ←16.

Make negative turns until a bell rings in the machine, then make a positive turn.

The product register will
now show **0895128000000000**
and the multiplier
register **300000000**

Press the right-hand shift key → once and make negative turns until the bell rings, then make one positive turn.

Proceed in the same way with every remaining figure in the dividend. The division comes out even. The product register now shows nothing but noughts.

The answer (quotient) appearing in the multiplier register is **329640000**

If the division does not come out even, the remainder shows up in the product register.

In division, the decimal point is placed in accordance with the instructions given on page 13.

Clear all the registers when you have completed the calculation.
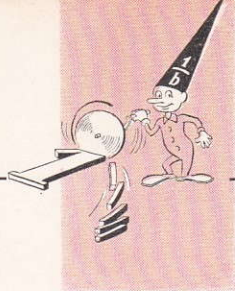
Division

Reciprocal values

Example: $\dfrac{1}{98}$

The reciprocal is an inverted number or, expressed in fractions, it is 1 divided by the number, viz.

$$\frac{1}{number}$$

This division may be performed in the ordinary manner by means of negative turns, but the simplest method is the following:

Set up 98. Press the tabulator [←16] to move the number to the far left of the setting register, then make positive turns. The bell will ring on the second turn, after which you make one negative turn. Press the right-hand shift key [→] once, make positive turns until the bell rings followed by a negative turn. Continue in this manner until the multiplier register is completely filled with figures.

The answer, appearing in the multiplier register, is **102040816**
Place the *decimal point* in accordance with this rule: Put in front of the answer you received in the multiplier register as many noughts as there are whole number digits in the original number, in this case two noughts. The first of these is the unit nought. The answer is therefore 0.0102040816.

Clear all the registers when you have completed the calculation.

Division

Multiplication involving further division of product

Example: $(4921 \times 512) : 18 = ?$

Multiply 4921×512 in the ordinary manner.

The product is .... `0000000002519552`

Press the left-hand shift key ← once to align the first figure in the setting register with the first figure in the product register. Move the transfer lever forward. This moves the product to the setting register and clears the product and multiplier registers. Press the tabulator ←16, transfer the number to the left side of the product register, and proceed to divide by 18 in the ordinary manner.

The answer is 139975.111.

To place the decimal point, refer to page 13.

Clear all the registers when you have completed the calculation.

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Division

Division involving further multiplication of quotient

Example: (5687 : 4)×341 = ?

Divide 5687 by 4 in the ordinary manner.

The quotient is .... `142175000`

Clear the setting register. Move the transfer lever forward and press the tabulator `←11` . This moves the quotient to the setting register.

Multiply the number in the setting register by 341.

The answer is .... `0000048481675000`

To place the decimal point, refer to page 13.

Clear all the registers when you have completed the calculation.

Rules for placing decimal point
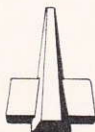
Addition and subtraction

Place the decimal point identically in the setting and product registers. Set up all numbers with the same number of decimals so that they come right in relation to the decimal point in the setting register.

Multiplication

The number of decimals in the first factor plus the number of decimals in the second factor equals the number of decimals in the product.

Example: $3.18 \times 5.123 = 16.29114$
2 decimals + 3 decimals = 5 decimals

Division

The number of decimals in the product register less the number of decimals in the setting register to the left of the white line indicator (count the noughts, if any) equals the number of decimals in the multiplier register.

After having set up both numbers to the extreme left, mark the position of the decimal point in the multiplier register. Then proceed with the division.

Clear all the registers when you have completed the calculation.

13

Rules for placing decimal point

Example: 525.16 : 3.5 = 150.045714

Multiplier register

`5251600000000000`
16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

Product register

`150045714`
9 8 7 6 5 4 3 2 1

Setting register

`35000000000`
16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

Product register	13 decimals
— Setting register	7 ,,
= Multiplier register	6 ,,

Placing decimal point in division

a) 304.50 : 15.4 = ?

b) 98.67 : 1344.78 = ?

c) 18.09 : 0.003 = ?

d) 0.0009 : 1.69 = ?

a) Set up 30450 and 154 at the extreme left in the ordinary manner, but do not begin the division yet. Place the decimal point after 304 in the product register, which gives you 13 decimals. Place the decimal point after 15 in the setting register. Figure out how many decimals (including noughts) you have up to the white line indicator. In this case you have 6 decimals. Compute the difference between the decimals in the product and setting registers, here 13—6 = 7. Place the decimal point at 7 in the multiplier register. Proceed to divide. The answer is 19.7727272.

Clear all the registers when you have completed the calculation.

14

b) Set up the numbers. The product register indicates 14 decimals and the setting register 4, which gives you 10 decimals in the answer. Since the multiplier register has room for no more than 9, you lack one decimal. The missing decimals are always noughts and are placed before the decimals which appear in the multiplier register. Write down these noughts before you start dividing (don't forget the unit nought).
The answer is 0.0733725962.

c) Set up 1809 and only a 3 without noughts ahead of it. The product register indicates 14 decimals and the setting register 10 (8 visible + 2 noughts that were not set up), giving you 4 decimals in the multiplier register.
The answer is 6030.

d) Set up only a 9 without noughts ahead of it, and 169. 16 visible + 3 noughts = 19 decimals in the product register—7 decimals in the setting register = 12 in the multiplier register (9 + the 3 which are missing).
The answer is 0.000532544378.

Clear all the registers when you have completed the calculation.

EXAMPLES

- - - - - - - - - - - - - -

Estimating costs

> **EXAMPLE:**
>
> What will be the cost of concrete used to pour a foundation wall that is 3 metres high, 32.5 m. long and 0.19 m. thick. The price of a cubic metre of concrete is Sw. Cr. 95.35.

$32.5 \times 3 \times 0.19 \times 95.35 = ?$

Set up 325 and multiply by 3. Move the transfer lever forward to transfer the product, 975, from the product register to the setting register and to clear the multiplier register.

Multiply directly by 19. The answer is 18525. Press once on the left-hand shift key, move the transfer lever forward, and finally multiply by 9535. Point off 5 decimal places.

The price is Sw. Cr. 1,766.36.
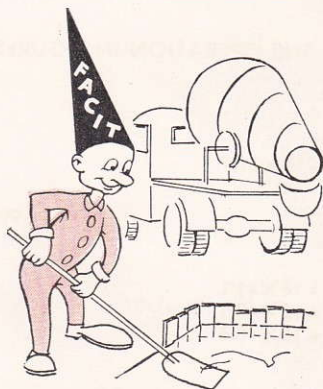
THE OPERATION IN FIGURES

32.5×3

$(= 97.5)$

97.5×0.19

$(= 18.525)$

18.525×95.35

1766.35875

PRINCIPLE: The simplest method of carrying out continuous multiplication is to move the product from the product register to the setting register by means of the transfer lever, and proceed to multiply by the subsequent numbers.

16

The same factor recurring in several multiplications
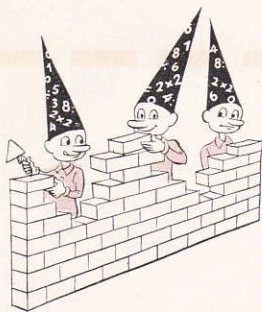
EXAMPLE:

Three workers with the same hourly pay, 4.18, were employed on a job 31.1, 40.3 and 52.1 hours, respectively.

How much did each receive in wages?

THE OPERATION IN FIGURES

$4.18 \times 31.1 = ?$
$4.18 \times 40.3 = ?$
$4.18 \times 52.1 = ?$

4.18×31.1

The constant factor is 4.18. Set it up in the setting register, and multiply by 31.1.

(= 129.998) **The first worker's pay is 130.00.**

4.18×41.1
4.18×40.1
4.18×40.3

Do not clear the registers.
The constant factor, 4.18, must now be multiplied by 40.3. This can be done by changing the figure 31.1 in the multiplier register to 40.3.
Make a positive turn in the third computation position, where the last multiplication ended. The multiplier register now shows 41.1. Press the right-hand shift key and make a negative turn. Press once more on the right-hand shift key and make two positive turns. The figure in the multiplier register is now 40.3.

(= 168.454) **The second worker's pay is 168.45.**

4.18×40.1
4.18×42.1

4.18×52.1

Do not clear the registers.
Now the 40.3 in the multiplier register is to be changed to 52.1 by means of positive and negative turns and the left-hand shift key. Start with two negative turns, press the left-hand shift key, make two positive turns, press the left-hand shift key again and make one positive turn. The factor 52.1 now appears in the multiplier register.

(= 217.778) **The third worker's pay is 217.78.**

PRINCIPLE: Do the whole operation with the constant factor in the setting register. After each multiplication the factor in the multiplier register is changed to the new one by positive and negative turns and use of the shift keys. If the various factors to be secured in the multiplier register differ very much from each other, it is recommended that the product and multiplier registers be cleared between multiplications.

17

Computation of surface areas

EXAMPLE:

Two walls are to be completely covered with tile. How many tiles will be needed if the one wall measures 345 cm. wide and 260 cm. high, and the other wall 416 cm. wide and 270 cm. high? The tiles are 15×15 cm. each.

$$\frac{345 \times 260 + 416 \times 270}{15 \times 15}$$

Multiply 15×15 in the usual way. Write down the answer, 225 sq. cm., and clear the registers.
Multiply 345×260. Clear the setting and multiplier registers. Multiply 416×270. The combined wall surface is 202020 sq. cm. Move one step to the left with the left-hand shift key. Move the transfer lever forward. Press tabulator key 16 and make a positive turn. Clear the setting and multiplier registers.
Set up 225 on the keyboard, press tabulator key 16, and perform the division in the usual manner.

897.87 tiles will be needed.

THE OPERATION IN FIGURES

15×15   (=225)
345×260+416×270
                            (=202020)
202020 : 225

                            (=897.866)

PRINCIPLE: First multiply the numbers in the divisor and write down the product. Then carry out the two multiplications, accumulating the products. Finally, divide in the usual manner.

18

Computing a series of discounts (chain-discounts)

EXAMPLE:

$$1,150 - 25\% + 5\% - 2.5\% = ?$$

Set up 1150 and multiply by 75 (100 % — 25 %).
1150 × 0.75 = 862.50.

Move the transfer lever forward. Multiply directly by 105 (100 % + 5 %).

862.50 × 1.05 = 905.63 (905.6250).

Move the transfer lever forward. Multiply directly by 975 (100 % — 2.5 %).

905.6250 × 0.975 = 882.98 (882.9843750).

If the same chain-discounts are of **frequent occurrence**, you can greatly simplify your figure-work by preparing a discount table. (A suggested table appears at the bottom of this page.)

The chain-discount factor is determined by the following method: start off with 100, deduct the minus percentages from 100 and add the plus percentages to 100. Then multiply the new numbers by one another.

Point off two decimal places in the product for every percentage in addition to the decimals already contained in the factors. Like this: 75 × 105 × 97.5 = 767812.5. Point off six more decimal places. Your chain-discount factor is 0.7678125.

Use this number as a constant factor and multiply by the different gross prices. Applying this method to the example above, the computation proceeds as follows: Set up the chain-discount factor, 0.7678125, and multiply directly by the gross, 1150.

The net amount is: 882.98.

THE OPERATION IN FIGURES

1150 × 75

86250 × 105   (= 862.50)

9056250 × 975   (= 905.6250)

= 882.9843750

Table of some common chain-discount factors:

	— 5	— 6	— 20	+ 5	+ 7	+ 20
+ 10—20	0.836	0.8272	0.704	0.924	0.9416	1.056
+ 15—10	0.98325	0.9729	0.828	1.08675	1.10745	1.242
— 3—20	0.7372	0.72944	0.6208	0.8148	0.83032	0.9312
— 5—40	0.5415	0.5358	0.456	0.5985	0.6099	0.684
— 13—17	0.685995	0.678774	0.57768	0.758205	0.772647	0.86652
— 20—30	0.532	0.5264	0.448	0.588	0.5992	0.672

The same divisor recurring in several divisions

The total, 59,150, is the constant number by which all the amounts should actually be divided. Divisions with constant numbers, however, are easier to perform by multiplying by the reciprocal value of the divisor.

Compute the reciprocal value of 59150 (see page 10) and then clear the setting register only. The multiplier register shows 169061707.

Now transfer this number from the multiplier to the setting register as follows: Clear the setting register and move the transfer lever forward. As soon as the lever returns to normal position press tabulator key 11.

To simplify the placing of the decimal point, perform the first multiplication with the original number, 59150. The decimal point in the product register is placed at 11 so as to mark off 100 (99.99999969050) in the computed number. In making the subsequent multiplications by the various amounts, use the same method as described on page 17.

Check for correct multiplication by adding the different percentage figures: they should total 100.

THE OPERATION IN FIGURES

$0.00169061707 \times 5.676 = 9.60 \%$
$0.00169061707 \times 13.743 = 23.23 \%$
$0.00169061707 \times 2.944 = 4.98 \%$
$0.00169061707 \times 9.626 = 16.27 \%$
$0.00169061707 \times 1.245 = 2.10 \%$
$0.00169061707 \times 11.551 = 19.53 \%$
$0.00169061707 \times 14.365 = 24.29 \%$
$\overline{100.00 \%}$

PRINCIPLE: Take the reciprocal value of the total. Move the transfer lever forward to carry this number over to the setting register, and then multiply it by the various figures. If greater capacity is needed, set up the reciprocal value (obtained from the multiplier register) again, instead of the direct transfer to the setting register, but in this case reduced to 5 figures. Then multiply this number by the figures as described above.
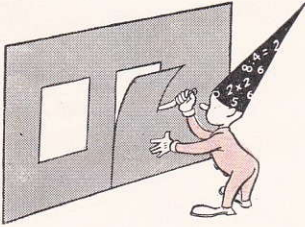
E X A M P L E :

On a wall 8.25×2.65 m. there is a window 2.0×1.4 m. and a door 2.15×0.9 m. How large is the wallpaper surface?

THE OPERATION IN FIGURES

Be sure the separate products have the same number of decimals. Add noughts where necessary. The product register's decimal indicator should set off four decimal places since the factors have two each.

8.25×2.65   (=21.8625)   8.25×2.65—2.00×1.40—2.15×0.90 = ?

Compute the size of the whole wall surface by multiplying 8.25 by 2.65. Clear the setting and multiplier registers but let 21.8625 remain in the product register.

—2.00×1.40   (=19.0625)   The next multiplication, 2.00×1.40, is carried out by negative turns, and as a result the new product is subtracted from the number in the product register. Clear the multiplier and setting registers. The product of the last multiplication, 2.15×0.90, is also to be subtracted from the number in the product register, so it should also be performed by negative turns.

—2.15×0.90   (=17.1275)   The wallpaper surface is 17.1275 m².

PRINCIPLE: Let the product of the first multiplication remain in the product register. Carry out the remaining multiplications with negative turns, which will cause the new products to be subtracted from the first one.

21

Rule of Three in one operation

<div style="border: 2px solid red;">

E X A M P L E :

A dozen pens cost 3.75. What is the price of 1, and what is the price of 7?

</div>

Both calculations can be performed at the same time in the following manner:
Set up both the 12 and the 7 in the setting register with eight noughts between them, thus 12000000007. Press tabulator key 16 and make positive turns, moving the set-up numerals from left to right until the number 375 appears in the left end of the product register. The figure 3125 now appears in the multiplier register, and 375 on the left in the product register and 21875 on the right.
The price per dozen, 3.75, has thus been divided by 12.

The price per unit is 0.3125.

At the same time this unit price was multiplied by 7 on the right end of the product register.
After six decimals have been marked off, the answer to the second part of the problem is:

7 pens cost 2.19.

THE OPERATION IN FIGURES

$12000000007 \times 312500$

$= 3750000002187500$

PRINCIPLE: The division is carried out by multiplication in the left end of the product register, giving the unit price in the multiplier register. At the same time the unit price is automatically multiplied by the number on the right in the setting register.

<div style="border:1px solid red">

E X A M P L E 1:

An article sells for 1,675.25 less 15 %
discount. Find the amount of discount and
the net price.

</div>

THE OPERATION IN FIGURES

$$\frac{167525 \times 15}{100} \quad (=251.2875)$$

Set up the gross, 167525, and multiply by 15 in the usual manner. Do not clear the registers.

The discount is 251.29.

Continue to multiply until the number in the multiplier register changes to 85.

$$\frac{167525 \times 85}{100} \quad (=1423.9625)$$

The net price is 1,423.96.

Note: If the net price is all that is needed, multiply the gross amount straightaway by the complement of the discount, in this case 85.

<div style="border:1px solid red">

E X A M P L E 2:

An article sells for 125.25 plus an extra
carge of 5 %. Find the amount of extra
charge and the final price.

</div>

$$\frac{125.25 \times 5}{100} \quad (=6.2625)$$

Multiply 125.25 by 5.

The extra charge is 6.26.

Do not clear the registers. Continue to multiply until the number in the multiplier register changes to 105.

$$\frac{125.25 \times 105}{100} \quad (=131.5125)$$

The final price is 131.51.

Note: If the final price is all that is needed, multiply straightaway by 105.

PRINCIPLE: To find both the amount of the discount and the net price, multiply the gross amount by: (1) the rate of discount; (2) the complement of the discount.
If the net price is all that is needed, multiply the gross price by the complement of the discount.
To find both the amount of extra charge and the final price, multiply the net price by: (1) the rate of extra charge; (2) this rate + 100.

23

Ordinary interest computations
(continuous multiplication followed by division)

Set up 278445 and multiply by 147. Move the transfer lever forward, which transfers the 40931415 in the product register to the setting register. Continue to multiply by 55. The product register shows 2251227.825. Move this number one step to the left and then push the lever forward. Press tabulator key 16 and make a positive turn. Clear the setting and multiplier registers.
Set up 36000 and divide in the usual manner.

The interest is 62.53.

If you prefer to make one more multiplication instead of division, the example appears as follows:

$2784.45 \times 147 \times 5.5 \times 0.000027778 = ?$

The last multiplier, 0.000027778, is the inverted value of the divisor, 36000 (1 : 36000).
In other words, this entire operation can be performed as a series of multiplications.
After marking off the decimal point, the result is 62.53.

THE OPERATION IN FIGURES

2784.45 $\times$ 147
$(= 409314.15)$

409314.15 $\times$ 5.5
$(= 2251227.825)$

2251227.825 : 36000
$(= 62.534)$

PRINCIPLE A: Compute interest by continuous multiplication of numbers in the dividend, following up with ordinary division by 36000.
PRINCIPLE B: Compute interest by continued multiplication.

Tables

1 Conversion of pence (inches) to decimals of 1 shilling (1 foot)

1 pence (inch) = 0.083333 shilling (foot)

pence (inches)	0	1/8	1/4	3/8	1/2	5/8	3/4	7/8
	0.	0.	0.	0.	0.	0.	0.	0.
0	00000	01042	02083	03125	04167	05208	06250	07292
1	08333	09375	10417	11458	12500	13542	14583	15625
2	16667	17708	18750	19792	20833	21875	22917	23958
3	25000	26042	27083	28125	29167	30208	31250	32292
4	33333	34375	35417	36458	37500	38542	39583	40625
5	41667	42708	43750	44792	45833	46875	47917	48958
6	50000	51042	52083	53125	54167	55208	56250	57292
7	58333	59375	60417	61458	62500	63542	64583	65625
8	66667	67708	68750	69792	70833	71875	72917	73958
9	75000	76042	77083	78125	79167	80208	81250	82292
10	83333	84375	85417	86458	87500	88542	89583	90625
11	91667	92708	93750	94792	95833	96875	97917	98958

1/32 penny = 0.00260 shilling   1/16 penny = 0.00521 shilling   3/32 penny = 0.00781 shilling

2

Conversion of shillings and pence
to decimals of £ 1.

£ 1 = 20 s., 1 s. = 12 d.

d. → s. ↓	0	1	2	3	4	5	6	7	8	9	10	11
0	0.00	0.00417	0.00833	0.01250	0.01667	0.02083	0.02500	0.02917	0.03333	0.03750	0.04167	0.04583
1	05	05417	05833	06250	06667	07083	07500	07917	08333	08750	09167	09583
2	10	10417	10833	11250	11667	12083	12500	12917	13333	13750	14167	14583
3	15	15417	15833	16250	16667	17083	17500	17917	18333	18750	19167	19583
4	20	20417	20833	21250	21667	22083	22500	22917	23333	23750	24167	24583
5	25	25417	25833	26250	26667	27083	27500	27917	28333	28750	29167	29583
6	30	30417	30833	31250	31667	32083	32500	32917	33333	33750	34167	34583
7	35	35417	35833	36250	36667	37083	37500	37917	38333	38750	39167	39583
8	40	40417	40833	41250	41667	42083	42500	42917	43333	43750	44167	44583
9	45	45417	45833	46250	46667	47083	47500	47917	48333	48750	49167	49583
10	50	50417	50833	51250	51667	52083	52500	52917	53333	53750	54167	54583
11	55	55417	55833	56250	56667	57083	57500	57917	58333	58750	59167	59583
12	60	60417	60833	61250	61667	62083	62500	62917	63333	63750	64167	64583
13	65	65417	65833	66250	66667	67083	67500	67917	68333	68750	69167	69583
14	70	70417	70833	71250	71667	72083	72500	72917	73333	73750	74167	74583
15	75	75417	75833	76250	76667	77083	77500	77917	78333	78750	79167	79583
16	80	80417	80833	81250	81667	82083	82500	82917	83333	83750	84167	84583
17	85	85417	85833	86250	86667	87083	87500	87917	88333	88750	89167	89583
18	90	90417	90833	91250	91667	92083	92500	92917	93333	93750	94167	94583
19	95	95417	95833	96250	96667	97083	97500	97917	98333	98750	99167	99583

¹/₄ penny = £ 0.00104.   ¹/₂ penny = £ 0.00208.   ³/₄ penny = £ 0.00312.

3

Conversion of cwts., qrs. and lbs,
to decimals of 1 long ton

1 lb. = 0.000446429 ton. ½ lb. = 0.000223 ton.

The table shows 6 decimal places.

| | Cwts. | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 |
| | Tons | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 |

| | 0 cwt. | | | | 1 cwt. | | | |
lb.	0 qr.	1 qr.	2 qrs.	3 qrs.	0 qr.	1 qr.	2 qrs.	3 qrs.
0	0.000000	0.012500	0.025000	0.037500	0.050000	0.062500	0.075000	0.087500
1	00446	12946	25446	37946	50446	62946	75446	87946
2	00893	13393	25893	38393	50893	63393	75893	88393
3	01339	13839	26339	38839	51339	63839	76339	88839
4	01786	14286	26786	39286	51786	64286	76786	89286
5	02232	14732	27232	39732	52232	64732	77232	89732
6	02679	15179	27679	40179	52679	65179	77679	90179
7	03125	15625	28125	40625	53125	65625	78125	90625
8	03571	16071	28571	41071	53571	66071	78571	91071
9	04018	16518	29018	41518	54018	66518	79018	91518
10	04464	16964	29464	41964	54464	66964	79464	91964
11	04911	17411	29911	42411	54911	67411	79911	92411
12	05357	17857	30357	42857	55357	67857	80357	92857
13	05804	18304	30804	43304	55804	68304	80804	93304
14	06250	18750	31250	43750	56250	68750	81250	93750
15	06696	19196	31696	44196	56696	69196	81696	94196
16	07143	19643	32143	44643	57143	69643	82143	94643
17	07589	20089	32589	45089	57589	70089	82589	95089
18	08036	20536	33036	45536	58036	70536	83036	95536
19	08482	20982	33482	45982	58482	70982	83482	95982
20	08929	21429	33929	46329	58929	71429	83929	96529
21	09375	21875	34375	46875	59375	71875	84375	96875
22	09821	22321	34821	47321	59821	72321	84821	97321
23	10268	22768	35268	47768	60268	72768	85268	97768
24	10714	23214	35714	48214	60714	73214	85714	98214
25	11161	23661	36161	48661	61161	73661	86161	98661
26	11607	24107	36607	49107	61607	74107	86607	99107
27	12054	24554	37054	49554	62054	74554	87054	99554

4 Conversion of qrs. and lbs. to decimals of 1 cwt.

1 lb. = 0.00892857 cwt.

lb.	0 qr.	1 qr.	2 qrs.	3 qrs.
0	0.00000	0.25000	0.50000	0.75000
1	00893	25893	50893	75893
2	01789	26789	51789	76789
3	02679	27679	52679	77679
4	03571	28571	53571	78571
5	04464	29464	54464	79464
6	05357	30357	55357	80357
7	06250	31250	56250	81250
8	07143	32143	57143	82143
9	08036	33036	58036	83036
10	08929	33929	58929	83929
11	09821	34821	59821	84821
12	10714	35714	60714	85714
13	11607	36607	61607	86607
14	12500	37500	62500	87500
15	13393	38393	63393	88393
16	14286	39286	64286	89286
17	15179	40179	65179	90179
18	16071	41071	66071	91071
19	16964	41964	66964	91964
20	17857	42857	67857	92857
21	18750	43750	68750	93750
22	19643	44643	69643	94643
23	20536	45536	70536	95536
24	21429	46429	71429	96429
25	22321	47321	72321	97321
26	23214	48214	73214	98214
27	24107	49107	74107	99107

½ lb. = 0.00446 cwt.

5 Conversion of ozs. to decimals of 1 lb.

1 oz. = 0.062500 lb.

oz.	lb.	oz.	lb.
		8	0.500000
¼	0.015625	8¼	515625
½	031250	8½	531250
¾	046875	8¾	546875
1	062500	9	562500
1¼	078125	9¼	578125
1½	093750	9½	593750
1¾	109375	9¾	609375
2	125000	10	625000
2¼	140625	10¼	640625
2½	156250	10½	656250
2¾	171875	10¾	671875
3	187500	11	687500
3¼	203125	11¼	703125
3½	218750	11½	718750
3¾	234375	11¾	734375
4	250000	12	750000
4¼	265625	12¼	765625
4½	281250	12½	781250
4¾	296875	12¾	796875
5	312500	13	812500
5¼	328125	13¼	828125
5½	343750	13½	843750
5¾	359375	13¾	859375
6	375000	14	875000
6¼	390625	14¼	890625
6½	406250	14½	906250
6¾	421875	14¾	921875
7	437500	15	937500
7¼	453125	15¼	953125
7½	468750	15½	968750
7¾	484375	15¾	984375

Conversion of common fractions to decimal fractions

a) 4ths, 8ths, 16ths, 32nds

1/4	1/8	1/16	1/32		1/4	1/8	1/16	1/32	
									0.50000
			1	0.03125				17	53125
		1		06250			9		56250
			3	09375				19	59375
	1			12500		5			62500
			5	15625				21	65625
		3		18750			11		68750
			7	21875				23	71875
1				25000	3				75000
			9	28125				25	78125
		5		31250			13		81250
			11	34375				27	84375
	3			37500		7			87500
			13	40625				29	90625
		7		43750			15		93750
			15	46875				31	96875

b) 6ths, 12ths

1/6	1/12	
	1	0.08333
1	2	16667
	3	25000
2	4	33333
	5	41667
3	6	50000
	7	58333
4	8	66667
	9	75000
5	10	83333
	11	91667

c) 30ths

1/30	
1	0.03333
2	6667
3	10000
4	3333
5	6667
6	20000
7	3333
8	6667
9	30000
10	3333
11	6667
12	40000
13	3333
14	6667
15	50000
16	3333
17	6667
18	60000
19	3333
20	6667
21	70000
22	3333
23	6667
24	80000
25	3333
26	6667
27	90000
28	3333
29	6667

7 Table of Interest Factors

%	0	$^1/_4$	$^1/_2$	$^3/_4$
0	0.0000000 000	0.0000069 444	0.0000138 889	0.0000208 333
1	0277 778	0347 222	0416 667	0486 111
2	0555 555	0625 000	0694 444	0763 889
3	0833 333	0902 778	0972 222	1041 667
4	1111 111	1180 556	1250 000	1319 444
5	1388 889	1458 333	1527 778	1597 222
6	1666 667	1736 111	1805 556	1875 000
7	1944 444	2013 889	2083 333	2152 778
8	2222 222	2291 667	2361 111	2430 556
9	2500 000	2569 444	2638 889	2708 333
10	2777 778	2847 222	2916 667	2986 111
11	3055 556	3125 000	3194 444	3263 889
12	3333 333	3402 778	3472 222	3541 667
13	3611 111	3680 556	3750 000	3819 444
14	3888 889	3958 333	4027 778	4097 222
15	4166 667	4236 111	4305 556	4375 000

8 Table of Interest Divisors

%	0	$^1/_4$	$^1/_2$	$^3/_4$
0		144 000.000	72 000.000	48 000.000
1	36 000.000	28 800.000	24 000.000	20 571.429
2	18 000.000	16 000.000	14 400.000	13 090.909
3	12 000.000	11 076.923	10 285.714	9 600.000
4	9 000.000	8 470.588	8 000.000	7 578.947
5	7 200.000	6 857.143	6 545.455	6 260.870
6	6 000.000	5 760.000	5 538.462	5 333.333
7	5 142.857	4 965.517	4 800.000	4 645.161
8	4 500.000	4 363.636	4 235.294	4 114.286
9	4 000.000	3 891.892	3 789.474	3 692.308
10	3 600.000	3 512.195	3 428.571	3 348.837
11	3 272.727	3 200.000	3 130.435	3 063.830
12	3 000.000	2 938.776	2 880.000	2 823.529
13	2 769.231	2 716.981	2 666.667	2 618.182
14	2 571.429	2 526.316	2 482.759	2.440.678
15	2 400.000	2 360.656	2 322.581	2 285.714

Table of Squares, correct to the nearest fourth figure. The first three figures of the square root can be read from the table, and the fourth interpolated. Then by dividing, the desired root is secured in 7 or 8 figures.

9

$\sqrt{}$	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9
10	100.0	102.0	104.0	106.1	108.2	110.3	112.4	114.5	116.6	118.8
11	121.0	123.2	125.4	127.7	130.0	132.3	134.6	136.9	139.2	141.6
12	144.0	146.4	148.8	151.3	153.8	156.3	158.8	161.3	163.8	166.4
13	169.0	171.6	174.2	176.9	179.6	182.3	185.0	187.7	190.4	193.2
14	196.0	198.8	201.6	204.5	207.4	210.3	213.2	216.1	219.0	222.0
15	225.0	228.0	231.0	234.1	237.2	240.3	243.4	246.5	249.6	252.8
16	256.0	259.2	262.4	265.7	269.0	272.3	275.6	278.9	282.2	285.6
17	289.0	292.4	295.8	299.3	302.8	306.3	309.8	313.3	316.8	320.4
18	324.0	327.6	331.2	334.9	338.6	342.3	346.0	349.7	353.4	357.2
19	361.0	364.8	368.6	372.5	376.4	380.3	384.2	388.1	392.0	396.0
20	400.0	404.0	408.0	412.1	416.2	420.3	424.4	428.5	432.6	436.8
21	441.0	445.2	449.4	453.7	458.0	462.3	466.6	470.9	475.2	479.6
22	484.0	488.4	492.8	497.3	501.8	506.3	510.8	515.3	519.8	524.4
23	529.0	533.6	538.2	542.9	547.6	552.3	557.0	561.7	566.4	571.2
24	576.0	580.8	585.6	590.5	595.4	600.3	605.2	610.1	615.0	620.0
25	625.0	630.0	635.0	640.1	645.2	650.3	655.4	660.5	665.6	670.8
26	676.0	681.2	686.4	691.7	697.0	702.3	707.6	712.9	718.2	723.6
27	729.0	734.4	739.8	745.3	750.8	756.3	761.8	767.3	772.8	778.4
28	784.0	789.6	795.2	800.9	806.6	812.3	818.0	823.7	829.4	835.2
29	841.0	846.8	852.6	858.5	864.4	870.3	876.2	882.1	888.0	894.0
30	900.0	906.0	912.0	918.1	924.2	930.3	936.4	942.5	948.6	954.8
31	961.0	967.2	973.4	979.7	986.0	992.3	998.6	1005	1011	1018
32	1024	1030	1037	1043	1050	1056	1063	1069	1076	1082
33	1089	1096	1102	1109	1116	1122	1129	1136	1142	1149
34	1156	1163	1170	1176	1183	1190	1197	1204	1211	1218
35	1225	1232	1239	1246	1253	1260	1267	1274	1282	1289
36	1296	1303	1310	1318	1325	1332	1340	1347	1354	1362
37	1369	1376	1384	1391	1399	1406	1414	1421	1429	1436
38	1444	1452	1459	1467	1475	1482	1490	1498	1505	1513
39	1521	1529	1537	1544	1552	1560	1568	1576	1584	1592
40	1600	1608	1616	1624	1632	1640	1648	1656	1665	1673
41	1681	1689	1697	1706	1714	1722	1731	1739	1747	1756
42	1764	1772	1781	1789	1798	1806	1815	1823	1832	1840
43	1849	1858	1866	1875	1884	1892	1901	1910	1918	1927
44	1936	1945	1954	1962	1971	1980	1989	1998	2007	2016
45	2025	2034	2043	2052	2061	2070	2079	2088	2098	2107
46	2116	2125	2134	2144	2153	2162	2172	2181	2190	2200
47	2209	2218	2228	2237	2247	2256	2266	2275	2285	2294
48	2304	2314	2323	2333	2343	2352	2362	2372	2381	2391
49	2401	2411	2421	2430	2440	2450	2460	2470	2480	2490

$\sqrt{}$	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9
50	2500	2510	2520	2530	2540	2550	2560	2570	2581	2591
51	2601	2611	2621	2632	2642	2652	2663	2673	2683	2694
52	2704	2714	2725	2735	2746	2756	2767	2777	2788	2798
53	2809	2820	2830	2841	2852	2862	2873	2884	2894	2905
54	2916	2927	2938	2948	2959	2970	2981	2992	3003	3014
55	3025	3036	3047	3058	3069	3080	3091	3102	3114	3125
56	3136	3147	3158	3170	3181	3192	3204	3215	3226	3238
57	3249	3260	3272	3283	3295	3306	3318	3329	3341	3352
58	3364	3376	3387	3399	3411	3422	3434	3446	3457	3469
59	3481	3493	3505	3516	3528	3540	3552	3564	3576	3588
60	3600	3612	3624	3636	3648	3660	3672	3684	3697	3709
61	3721	3733	3745	3758	3770	3782	3795	3807	3819	3832
62	3844	3856	3869	3881	3894	3906	3919	3931	3944	3956
63	3969	3982	3994	4007	4020	4032	4045	4058	4070	4083
64	4096	4109	4122	4134	4147	4160	4173	4186	4199	4212
65	4225	4238	4251	4264	4277	4290	4303	4316	4330	4343
66	4356	4369	4382	4396	4409	4422	4436	4449	4462	4476
67	4489	4502	4516	4529	4543	4556	4570	4583	4597	4610
68	4624	4638	4651	4665	4679	4692	4706	4720	4733	4747
69	4761	4775	4789	4802	4816	4830	4844	4858	4872	4886
70	4900	4914	4928	4942	4956	4970	4984	4998	5013	5027
71	5041	5055	5069	5084	5098	5112	5127	5141	5155	5170
72	5184	5198	5213	5227	5242	5256	5271	5285	5300	5314
73	5329	5344	5358	5373	5388	5402	5417	5432	5446	5461
74	5476	5491	5506	5520	5535	5550	5565	5580	5595	5610
75	5625	5640	5655	5670	5685	5700	5715	5730	5746	5761
76	5776	5791	5806	5822	5837	5852	5868	5883	5898	5914
77	5929	5944	5960	5975	5991	6006	6022	6037	6053	6068
78	6084	6100	6115	6131	6147	6162	6178	6194	6209	6225
79	6241	6257	6273	6288	6304	6320	6336	6352	6368	6384
80	6400	6416	6432	6448	6464	6480	6496	6512	6529	6545
81	6561	6577	6593	6610	6626	6642	6659	6675	6691	6708
82	6724	6740	6757	6773	6790	6806	6823	6839	6856	6872
83	6889	6906	6922	6939	6956	6972	6989	7006	7022	7039
84	7056	7073	7090	7106	7123	7140	7157	7174	7191	7208
85	7225	7242	7259	7276	7293	7310	7327	7344	7362	7379
86	7396	7413	7430	7448	7465	7482	7500	7517	7534	7552
87	7569	7586	7604	7621	7639	7656	7674	7691	7709	7726
88	7744	7762	7779	7797	7815	7832	7850	7868	7885	7903
89	7921	7939	7957	7974	7992	8010	8028	8046	8064	8082
90	8100	8118	8136	8154	8172	8190	8208	8226	8245	8263
91	8281	8299	8317	8336	8354	8372	8391	8409	8427	8446
92	8464	8482	8501	8519	8538	8556	8575	8593	8612	8630
93	8649	8668	8686	8705	8724	8742	8761	8780	8798	8817
94	8836	8855	8874	8892	8911	8930	8949	8968	8987	9006
95	9025	9044	9063	9082	9101	9120	9139	9158	9178	9197
96	9216	9235	9254	9274	9293	9312	9332	9351	9370	9390
97	9409	9428	9448	9467	9487	9506	9526	9545	9565	9584
98	9604	9624	9643	9663	9683	9702	9722	9742	9761	9781
99	9801	9821	9841	9860	9880	9900	9920	9940	9960	9980

TABLE FOR CONVERSION

Metric system to British measures, and vice versa
In each case multiply by the factor given

LENGTH

Millimetres to inches	0.039 370	Inches to millimetres	25.399 98
Centimetres to inches	0.393 701	Inches to centimetres	2.539.998
Metres to feet	3.280 399	Feet to metres	0.304 799
Metres to yards	1.093 614	Yards to metres	0.914 399
Kilometres to yards	1093.614 500	Yards to kilometres	0.000 91
Kilometres to miles	0.621 372	Miles to kilometres	1.609 342

AREA

Square centimetres to square inches	0.155 00	Square inches to square centimetres	6.451 59
Square metres to square feet	10.763 87	Square feet to square metres	0.092 90
Square metres to square yards	1.195 99	Square yards to square metres	0.836 13
Square kilometres to square miles	0.386 10	Square miles to square kilometres	2.589 98
Hectares to acres	2.471 04	Acres to hectares	0.404 684

π = Ratio of circumference to diameter = 3.141592654

$1/\pi$ = Ratio of diameter to circumference = 0.318309886

VOLUME

|			
Cubic centimetres to cubic inches	0.061 02	Cubic inches to cubic centimetres	16.387 16
Cubic metres to cubic feet	35.310 735	Cubic feet to cubic metres	0.028 32
Cubic metres to cubic yards	1.307 94	Cubic yards to cubic metres	0.764 56

CAPACITY
(Liquid Measures)

Litres to pints	1.760 718	Pints to litres	0.567 95
Litres to U.S. pints	2.113 628	U.S. pints to litres	0.473 12
Litres to quarts	0.880 359	Quarts to litres	1.135 90
Litres to U.S. quarts	1.0567	U.S. quarts to litres	0.946 3
Litres to gallons	0.220 089	Gallons to litres	4.543 60
Litres to U.S. gallons	0.2642	U.S. gallons to litres	3.7850
Hectolitres to gallons	22.007 043	Gallons to hectolitres	0.045 44

WEIGHT

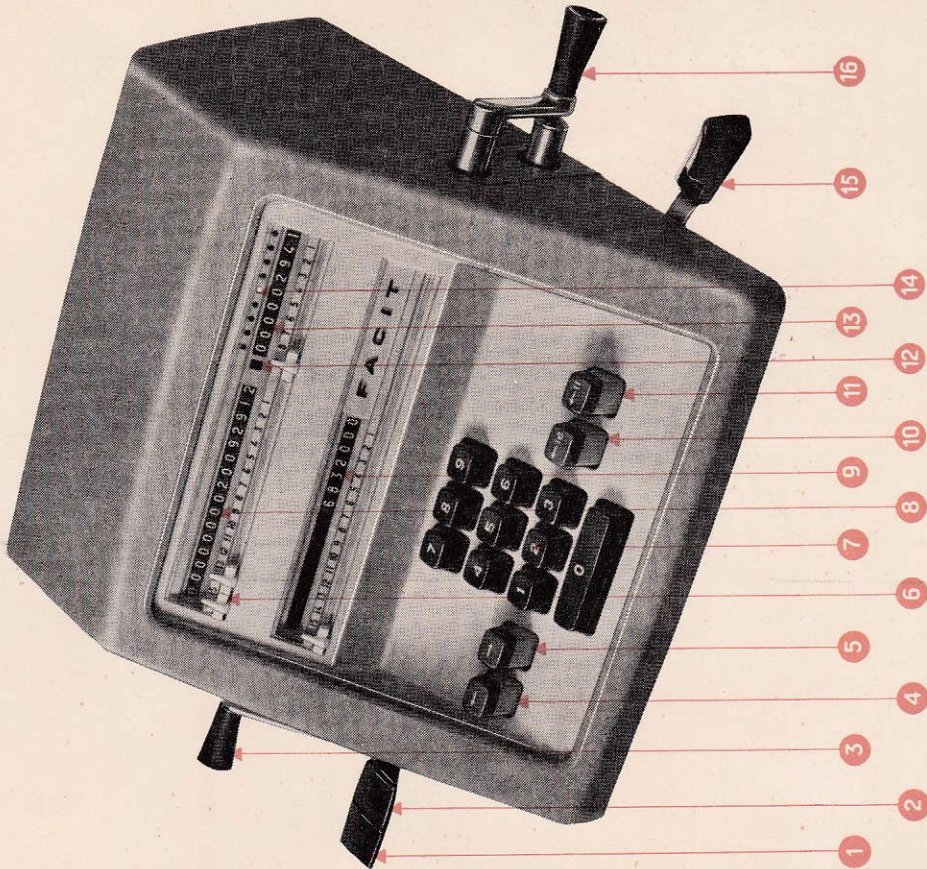|			
Grams to grains	15.432 337	Grains to grams	0.064 799
Grams to ounces	0.035 274	Ounces to grams	28.349 530
Grams to pounds	0.002 205	Pounds to grams	453.592 430
Kilograms to pounds	2.204 624	Pounds to kilograms	0.453 592
Kilograms to cwts.	0.019 684	Cwts. to kilograms	50.802 350
Kilograms to long tons	0.000 984	Long tons to kilograms	1016.047 00
Kilograms to short tons	0.000 815	Short tons to kilograms	907.184 00

Even a champion

needs freshing up
sometimes!
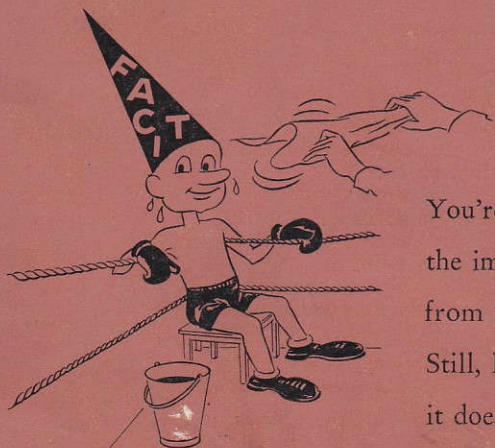
You're right in expecting almost
the impossible in staying power
from your Facit calculator.
Still, like all other machines,
it does need a drop of oil now and
then. You ought to see that it gets a
regular looking over, too, by a
Facit specialist. Call us today...
and arrange for regular servicing.

FACIT

1. THE CLEARING LEVER OF THE PRODUCT REGISTER clears the product register when pushed downwards.

2. THE CLEARING LEVER OF THE MULTIPLIER REGISTER clears the multiplier register when pushed downwards.

3. THE BACK TRANSFER LEVER carries over a number from the product or multiplier register to the setting register, and automatically clears the first two registers in doing so. BeBfore carrying over a product, make sure that the first figure in the setting register is directly beneath its counterpart in the product register. If these figures are out of line, press the left-hand shift key until they correspond.

4. THE LEFT-HAND SHIFT KEY moves the number in the setting register to the left one step at a time.

5. THE RIGHT-HAND SHIFT KEY moves the number in the setting register to the right one step at a time.

6. THE DECIMAL INDICATORS can be moved to any position on the three registers.

7. THE SETTING KEYS are used to set up the desired number one figure at a time and in the same order in which they read.

8. THE PRODUCT REGISTER shows the results of multiplication, addition and sub-traction, as well as any remainders ocurring in division.

9. THE SETTING REGISTER immediate-ly records every figure that you enter on the setting keys.

10. TABULATION KEY 16. Press this key once, and you move the entered number all the way to the left, directly into division position.

11. TABULATION KEY 11. Press this key once, and you move the entered number to the 11th figure position.

12. THE REVOLUTION DIRECTION INDICATOR shows black for positive and red for negative coupling.

13. THE MULTIPLIER REGISTER. This register shows the result, or quotient, in divi-sion, the number of items summed up in addition, and the first number set up in multiplication.

14. THE POSITION INDICATOR, a white pointer above the multiplier register, shows in which column position the machine is operating at the moment.

15. THE CLEARING LEVER OF THE SETTING REGISTER clears the setting register when pushed towards the crank.

16. THE CRANK is kept in pulled-out position as long as you are turning it and, once you have set up your numbers, is used to perform all the necessary operations of multiplication, division, addition and sub-traction. The multiplier mechanism counts the number of positive turns when the first and following turns are positive. It counts the number of negative turns when the first and following turns are negative. In other words, the original positive or negative coupling will remain engaged until you clear the multiplier register.

1. The clearing lever of the product register
2. The clearing lever of the multiplier register
3. The transfer lever
4. The left-hand shift key
5. The right-hand shift key
6. The decimal indicators
7. The setting keys
8. The product register
9. The setting register
10. Tabulation key 16
11. Tabulation key 11
12. The revolution direction indicator
13. The multiplier register
14. The position indicator
15. The clearing lever of the setting register
16. The crank