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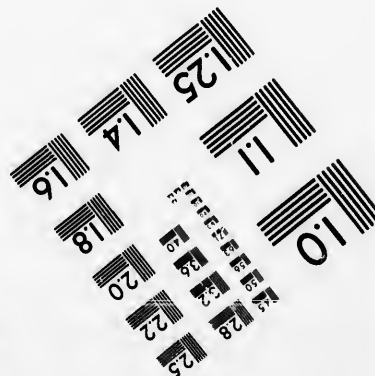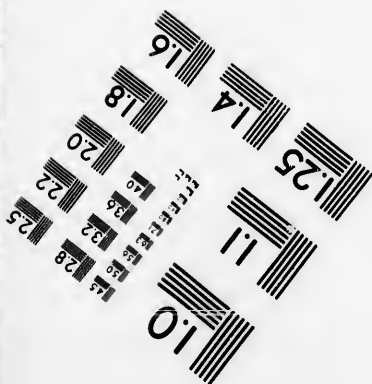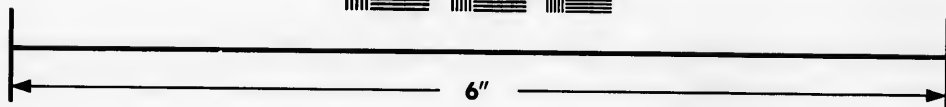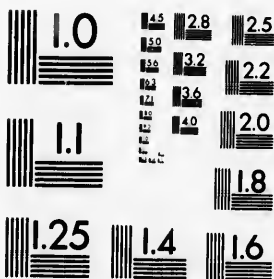## TEST TARGET (MT-3)

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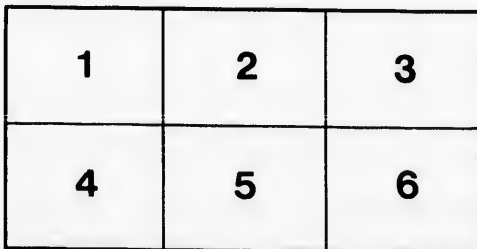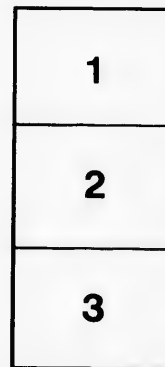
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1	2	3

1
2
3

1	2	3
4	5	6

9

GRUMMETT'S

Canada Calculator.

⸻ ◆∙◆∙◆ ⸻

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—FOR—

All who desire to advance them-
selves in Figures.

—BY—

JOSEPH GRUMMETT.

PREFACE.

The ability to make business calculations with ease to every class of the community, is of great importance. Wonderful and startling discoveries have been made in the following rules. All the shortest methods in the known world are here brought together and so explained that any child of an ordinary mind, and knowing the tables, can, without any other instructor, learn any rule in this book in a very short time.

JOSEPH GRUMMETT.

Galt, November, 1877.

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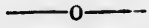
ADDITION.

Various suggestions have been made refer-ring to improved methods of addition. In practice I have found no better or quicker method than the following :—

RULE.—Commence at the bottom of the right hand column ; add thus—15, 19, 29 ; set down the 9 in tens place and carry the two tens to the second column, then add thus —4, 10, 18, 28 ; set down 8 in tens place and carry two hundreds to the third column, and add so on to the end. Never add in this manner—8 and 7 are 15, and 4 are 19, and 3 are 22, and 7 are 29; it is just as easy to name the sum at once, and save time and labour.

$$
\begin{array}{r}
4687 \\
6423 \\
5684 \\
4567 \\
4328 \\
\hline
25689
\end{array}
$$

MULTIPLICATION.

When the multiplier is any number between 11 and 20, the process is simply to multiply by the unit figure of the multiplier, set down one figure to the right hand of the multiplicant and add in the multiplicant.

What is the cost of 26 yards of goods at 14c per yard?

$$26 \times 14$$

$$\$3.64$$

PROCESS.—4 times 6 are 24, set down 4 to the right of the 6, carry 2, add it to 6 makes 8, then carry 8 ; then 4 times 2 are 8, and 8 to carry makes 16, set down 6, add the 1 to carry to the figure 2 gives 3, then make $3.64c the sum.

MULTIPLICATION.

To multiply any number of two figures by 11.

RULE.—Place the sum of the two figures between them.   Multiply 45 by 11—4 and 5 are 9 ; place the 9 between the 4 and 5, makes 495 the sum.

Multiply 87 by 11—8 and 7 are 15 ; set 5 between the 8 and 7, then one to carry add it to 8 makes 9, gives 957 the sum.

RULE NO. 4.

MULTIPLICATION.

To multiply any number by 11.

RULE.—Bring down the right hand figure 8 ; then add 8 and 7 are 15, bring down 5, carry 1 to 7 makes 8 ; then 8 and 5 are 13, bring down 3 and carry 1, add it to 5 makes 6 ; then 6 and 3 are 9, bring down 9, you have none to carry ; then bring down the 3, makes 39358 the sum.

$$3578 \times 11$$
$$39358$$

MULTIPLICATION.

To multiply when the sum of the units are 10 and the tens are alike.

RULE.—Multiply the figure in tens, place by the next larger number, and the tens by themselves.

What is the cost of 86 yards of goods at 84 cents per yard?

```
      86
      84
    ------
   $72.24
```

Multiply 91 by 99.

```
      91
      99
    ------
    9009
```

(left margin, partial text)

t hand figure
ring down 5,
and 5 are 13,
it to 5 makes
down 9, you
down the 3,

RULE NO. 6.

MULTIPLICATION.

When the units of any two numbers are alike.

———

RULE.—Multiply units into units, then the sum of the tens by the units, then the tens together.

———

What is the cost of 62 yards of Calico at 32 cents per yard ?

```
  62
  32
 ———
$19.84
```

PROCESS.—Twice 2 are 4, set the 4 in units place ; then twice 9 are 18, set down 8, carry 1 ; then 3 times 6 are 18 and to carry one makes 19—making $19.84 cents the sum.

MULTIPLICATION.

When the tens of any two numbers are alike.

RULE.—Multiply units together; then the sum of the units by the tens; then the tens together.

What is the cost of 64 lbs. of Sugar at 66 cents per pound ?

$$64$$
$$66$$
$$\$42.24$$

PROCESS.—6 times 4 are 24, set down 4 and carry 2 ; then 6 times 10 are 60, and carried 2 makes 62. set down 2 and carry 6 ; then 6 times 6 are 36, and carried 6 makes 42, gives $42.24c the sum.

B

6.

numbers are

nits, then the hen the tens

f Calico at 32

the 4 in units own 8, carry o carry one the sum.

RULE NO. 8.

MULTIPLICATION.

To Multiply by 25 or $\frac{1}{4}$.

What is the cost of 64 yards of goods at 25 cents per yard ?

RULE.—Annex two ciphers to the number of yards and divide by 4, and you will have the answer in cents.

4)64.00

$16.00

Half yard 4)64.$\overset{\frac{1}{2}}{50}$.00

$16.12.50

or $\frac{1}{4}$.

ds of goods at

to the number
you will have

MULTIPLICATION.

To multiply by 50 or $\frac{1}{2}$.

What is the cost of 79 yards of calico at 50 cents per yard ?

RULE.—Annex two ciphers to the number of yards and divide by 2, and you will have the answer in cents.

$$2)79.00$$
$$\overline{\$39.50}$$

Quarter yard $2)79.\overset{\frac{1}{4}}{25}.00$
$$\overline{\$39.62.50}$$

MULTIPLICATION.

To Multiply by $12\frac{1}{2}$ or $\frac{1}{8}$.

What cost 88 pounds of goods at $12\frac{1}{2}$ cents per pound ?

RULE.—Annex two ciphers to the number of pounds and divide by 8, and you will have the answer in cents.

$$8)88.00$$
$$\overline{\$11.00}$$

RULE NO. 11.

MULTIPLICATION.

To multiply by 1.25 or $\frac{1}{8}$.

What is the cost of 96 yards of goods at $1.25 per yard?

RULE.—Annex three ciphers to the number of yards and divide by 8, and you will have the answer in cents.

$$8)96.000$$
$$\overline{\$120.00}$$

$$\text{Half yard} \quad 8)96.\overset{\frac{1}{2}}{5}0.000$$
$$\overline{\$120.62.50}$$

RULE No. 12.

MULTIPLICATION.

To Multiply by 250 or ¼.

What is the cost of 48 yards of goods at $2.50 per yard?

Rule.—Annex 3 ciphers to the number of yards and divide by 4, and you will have the answer in cents.

$$4)48.000$$
$$\overline{\$120.00}$$

$$\tfrac{3}{4} \text{ yard } 4)48.75.000$$
$$\overline{\$121.87.50}$$

TABLE OF ALIQUOT PARTS.

25	is	$\frac{1}{4}$	of	100
50	"	$\frac{1}{2}$	"	"
75	"	$\frac{3}{4}$	"	"
$12\frac{1}{2}$	"	$\frac{1}{8}$	"	"
$37\frac{1}{2}$	"	$\frac{3}{8}$	"	"
$62\frac{1}{2}$	"	$\frac{5}{8}$	"	"
$87\frac{1}{2}$	"	$\frac{7}{8}$	"	"
$6\frac{1}{4}$	"	$\frac{1}{16}$	"	"
$18\frac{3}{4}$	"	$\frac{3}{16}$	"	"
$31\frac{1}{4}$	"	$\frac{5}{16}$	"	"
$8\frac{1}{3}$	"	$\frac{1}{12}$	"	"
$16\frac{2}{3}$	"	$\frac{1}{6}$	"	"
$33\frac{1}{3}$	"	$\frac{1}{3}$	"	"
$66\frac{2}{3}$	"	$\frac{2}{3}$	"	"
$83\frac{1}{3}$	"	$\frac{5}{6}$	"	"

To multiply any number by an aliquot part of 100.

RULE.—Annex two ciphers and divide by the fractional part.

TABLE OF ALIQUOT PARTS.

$83\frac{1}{3}$	is	$\frac{1}{12}$	of	1,000
$62\frac{1}{2}$	"	$\frac{1}{16}$	"	"
$66\frac{2}{3}$	"	$\frac{1}{15}$	"	"
125	"	$\frac{1}{8}$	"	"
250	"	$\frac{1}{4}$	"	"
375	"	$\frac{3}{8}$	"	"
625	"	$\frac{5}{8}$	"	"
875	"	$\frac{7}{8}$	"	"

To multiply any number by an aliquot part of 1000.

RULE.—Annex three ciphers and divide by the fractional part.

c

X Goodone

MULTIPLICATION.

To multiply a whole number and a half together.

RULE.—To the product of the whole number add half their sum plus $\frac{1}{4}$.

What will $6\frac{1}{2}$ yards of tape cost at $4\frac{1}{2}$ cents per yard?

PROCESS.—The sum of 6 and 4 are ten—half this sum is 5 ; then 4 times 6 are 24 and 5 are 29 ; to this add $\frac{1}{4}$.

$$
\begin{array}{r}
6\frac{1}{2} \\
4\frac{1}{2} \\
\hline
29\frac{1}{4}c
\end{array}
$$

TS.

n aliquot

d divide

c

RULE NO. 16.

MULTIPLICATION.

To multiply a whole number and a half together.

RULE.—When the sum is an odd number take half the next number below it then the fraction in the answer will be $\frac{3}{4}$.

What will $9\frac{1}{2}$ yards of goods cost at $2.50 per yard?

PROCESS.—The sum of 9 and 2 are 11 ; the next number below 11 is 10, half of 10 is 5 ; then twice 9 are 18 and 5 to carry makes 23, to this add $\frac{3}{4}$.

$$9\frac{1}{2}$$
$$2\frac{1}{2}$$
$$\overline{\$23\frac{3}{4}}$$

RULE NO. 17.

PERCENTAGE.

Means by the dollar.

A merchant bought goods at 80 cents per yard, what must he sell them at to gain 25 per cent. profit on the dollar.

RULE.—Multiply $1.25 by the first cost of the goods and you will have the selling price.

$$1.25$$
$$80$$
$$\overline{}$$
$$\$1{:}00.00$$

(left margin fragments)

nd a half

d number
then the

at $2.50

re 11 ; the
f 10 is 5 ;
makes 23,

RULE NO. 18.

INTEREST.

The base of this rule is 6 per cent.

Find the Interest on

$ 5 for 6 days or one week 5 mills.
10   "   "   "   1 cent.
20   "   "   "   2 cents.
40   "   "   "   4 cents.
50   "   "   "   5 cents.

For 12 days multiply by 2
 "   18   "   "   3
 "   24   "   "   4
 "   30   "   "   5

For one day divide by 6, and you will have the answer in mills.

If you have dollars and cents together, the answer will be in hundreds of mills.

In actual business a month is equivalent to 30 days, a year to 360 days. Custom has made this lawful.

For months multiply the dollars by half the number of months and you will have the answer in cents. If you have dollars and cents together, multiply by half the number of months and you will have the answer in hundreds of cents.

It is all 6 per cent. as a base.

For 1 per cent. divide by 6
 "   7   "   add $\frac{1}{6}$
 "   8 . "   add $\frac{1}{3}$
 "   9   "   add $\frac{1}{2}$
 " 10   "   add $\frac{2}{3}$
 " 11   "   add $\frac{5}{6}$
 " 12   "   multiply by 2
 " 18   "   "   3
 " 24   "   "   4
 " 30   "   "   5

To find the price of a load of hay or straw.

What is the cost of 19.50 pounds of hay at $14 per ton.

RULE.—Multiply the number of pounds by half the price per ton, and you will have the answer in mills.

$$\begin{array}{r} 19.50 \\ 7 \\ \hline \$13.65.0 \end{array}$$

The practice of buying or selling grain by the 100 pounds or the cental system, has many advantages over the bushel.

To find the value per cental when the price per bushel is given.

RULE.—Set down the price per bushel, and divide by the number of pounds in the bushel.

If wheat is $1.20 per bushel how much is that a cental or 100 pounds.

$$60)\$1.20$$
$$\$2$$

—————

To find the value per bushel when the price per cental is given.

—————

RULE.—Set down the price per cental, and multiply by the number of pounds in the bushel

—————

If wheat is $2 per cental how much is that per bushel?

$2.0
6
———
$1.20

BUSHEL MEASURE.

The following table shows the legal number of pounds per bushel :—

34 pounds—bushel of oats.

48 pounds—bushel of buckwheat.

48 pounds—bushel of barley.

60 pounds—bushel of beans.

56 pounds—bushel of Rye or Indian corn.

60 pounds—bushel wheat, peas or clover seed.