

**PRACTICAL
ARITHMETIC FOR
SENIOR CLASSES**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649677498

Practical Arithmetic for Senior Classes by Henry G. C. Smith

Except for use in any review, the reproduction or utilisation of this work in whole or in part in any form by any electronic, mechanical or other means, now known or hereafter invented, including xerography, photocopying and recording, or in any information storage or retrieval system, is forbidden without the permission of the publisher, Trieste Publishing Pty Ltd, PO Box 1576 Collingwood, Victoria 3066 Australia.

All rights reserved.

Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, re-sold, hired out, or otherwise circulated without the publisher's prior consent in any form or binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

www.triestepublishing.com

HENRY G. C. SMITH

**PRACTICAL
ARITHMETIC FOR
SENIOR CLASSES**

PRACTICAL ARITHMETIC

FOR

SENIOR CLASSES.

BY

HENRY G. C. SMITH,

TEACHER OF ARITHMETIC AND MATHEMATICS,
GEORGE HERIOT'S HOSPITAL.

Eleventh Edition, Improved.

EDINBURGH:

OLIVER AND BOYD, TWEEDDALE COURT.

LONDON: SIMPKIN, MARSHALL, AND CO.

1884.

Answers to this Book may be had, price 6d.

C
1802

42



PRACTICAL ARITHMETIC FOR JUNIOR CLASSES.

BY HENRY G. C. SMITH.

Price 6d. — Answers to Ditto, 6d.

KEINBURGH |
PRINTED BY OLIVER AND BOWEN,
TWEEDDALE COURT.

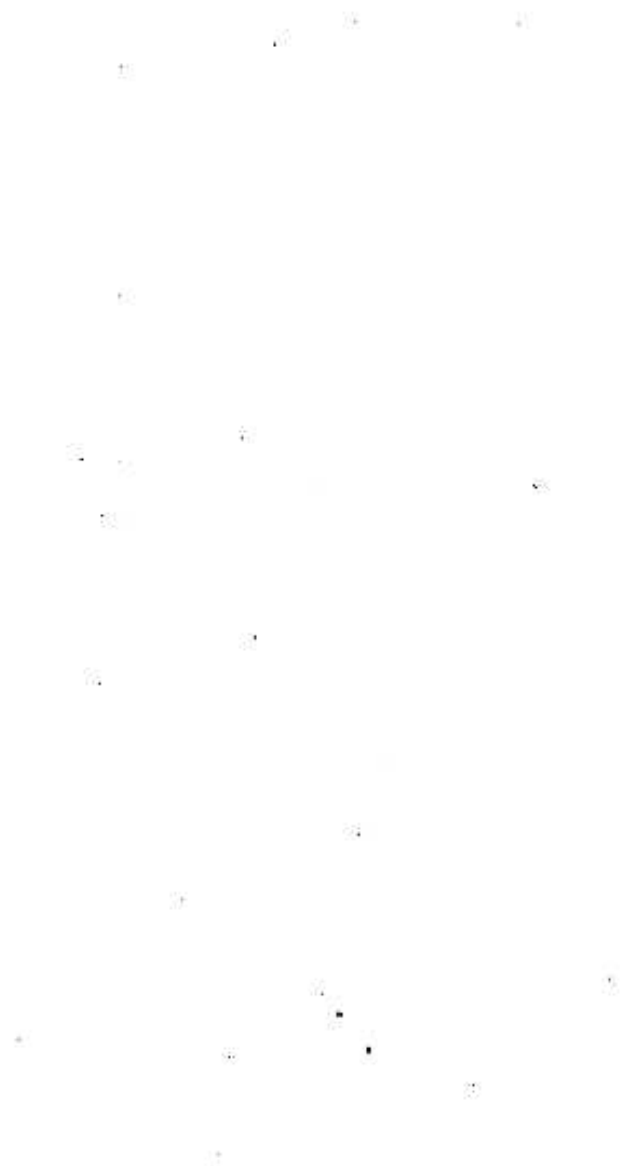
THIS Manual, which is a Sequel to *Practical Arithmetic for Junior Classes*, is intended for the use of those who have mastered the Fundamental Rules in Simple and Compound Numbers.

Considerable space, in accordance with the importance of the subject, has been devoted to the explanation of Fractions. The Metric System of Weights and Measures is treated in a manner befitting its general use for scientific purposes.

The Exercises, which are copious and original, have been constructed to combine interest with utility. They are arranged in distinct Sections, and are accompanied with Illustrative Processes.

In view of practical instruction, the explanatory remarks throughout the work are more of a concrete than an abstract character.

* * * *The Answers to the Exercises are published separately.*



CONTENTS.

	Page
Arithmetical Tables	7
Prims and Composite Numbers	12
Vulgar Fractions	19
Decimal Fractions	51
Continued Fractions	76
Practice	77
Allowances on Goods	90
Simple Proportion	92
Compound Proportion	103
Per-Centages—	
Statistics	108
Commission and Brokerage	111
Insurance	114
Interest	115
Discount	124
Equation of Payments	127
Stocks	128
Profit and Loss	131
Distributive Proportion	137
Averages	141
Equivalents in Goods and Money—	
Barter	144
Chain Rule.	145
Exchange	147
Involution.	154
Evolution	157
Scales of Notation	168
Duodecimals	171
Series	175
Compound Interest	180
Miscellaneous Exercises	186
Metric System of Weights and Measures	193

10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100

101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200

201

202

203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300

301

302

303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400

401

402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500

501

502

503

504

505

506

ARITHMETICAL TABLES.

I. MONEY.

MONEY OF ACCOUNT.

4 farthings	= 1 penny	d.	
12 d.	= 1 shilling	s.	
20 s.	= 1 pound	£.	
d. for denarius: s. for solidus: £ for libra.			

DECIMAL DIVISION OF £1.

10 mills, m.	= 1 cent	c.	
10 a.	= 1 florin	fl.	
10 fl.	= 1 pound	£.	

COINS IN CIRCULATION.

GOLD. *Sovereign*, £1; *Half-sov.* 10s. 1800 sovereigns are coined out of 30 lb. troy of sterling gold.

SILVER. *Crown*, 5s.; *Half-cr.* 2s. 6d.; *Florin*, 2s.; *Shilling*, 1s.; *Shilling*, 6d.; *Groat*, 4d.; *Three-pence*, 3d. 68 shillings are coined out of 1 lb. troy of sterling silver.

BRONZE. *Penny*, 1d.; *Halfpenny*, ½d.; *Farthing*, ¼d. In 100 parts of the bronze metal for these coins, there are—80, copper; 4, tin; and 1, zinc. To 1 lb. avoirdupois, there are—Of pennies, 48; of halfpennies, 80; of farthings, 180.

OBSOLETE COINS.

Testor, 6d.; *Dollar*, 4s; *Noble*, 6s; *Seven Shilling piece*; *Angel*, 10s; *Half-guinea*, 10s; *Mark*, 13¼; *Pistole*, 16s; *Guinea*, 21s; *Carolina*, 23s; *Jacobus*, 25s; *Moidore*, 27s; *Joannes*, 36s.

The denominations of *Scots Money* are one-tenth of the value of the corresponding names in sterling; thus,

£1 Scots = 20s. sterling.

1s. " = 12d. "

Also, 1 merk " = 13½d. "

II. WEIGHT.

The Act, 5^o Geo. IV. cap. 74, for establishing UNIFORMITY OF WEIGHTS AND MEASURES, came into operation on 1st Jan. 1826. By the Weights and Measures Act 1878 (41^o and 42^o Vic. cap. 49), the Imperial Standard of Weight continues to be the Pound AVOIRDUPOIS, now in the Standards Department of the Board of Trade; and of which, copies are placed in the Mint, the Royal Society of London, Greenwich Observatory, and the Palace at Westminster.

AVOIRDUPOIS WEIGHT.

Avoirdupois is the general weight of commerce. 1 lb. avoirdupois = 7000 grains.

16 drams, dr.	= 1 ounce	oz.	
16 oz.	= 1 pound	lb.	
28 lb.	= 1 quarter	qr.	
4 qr. or 112 lb.	= 1 hundredwt.	cwt.	
20 cwt.	= 1 ton	T.	

Also,

14 lb.	= 1 stone	st.	
100 lb.	= 1 cental	c.	

TROY WEIGHT.

Troy Wt. is used in weighing the precious metals.

24 grains, gr.	= 1 pennywt.	dwt.	
20 dwt.	= 1 ounce	oz.	
12 oz. or 5760 gr.	= 1 pound	lb.	

At the Mint, the OUNCE TROY is divided into 1000ths.

The fineness of gold is estimated in carats. Pure gold is said to be 24 carats fine. Sterling gold, of which every 24 parts contain 7 of alloy, is 22 carats fine.