

Solution Tables – A method of organizing word problem data

1. Problems are taken from the Official Guide for GMAT Review
2. Categorize the problem.
3. Organize the data the same way every time.
4. Clarify what is known and unknown.
5. Try to avoid equations and algebra by filling in by inspection what is needed.
6. Once a problem is fully internalized, you can often skip the solution table.
7. When given a value x and a total t , immediately think $y = t - x$.
8. Rework solution tables so they make sense to you.
9. Number theory problems don't lend themselves to solution tables.

Percents - p not p (165)

p	not p	total
px	$(1-p)x$	x
$.3x$	$.7x = 42$	x

p not p (287)

dom	for	total
px	$(1-p)x$	x
$.97x$	$.03x = 450K$	x

Percents - old/new (Sample 1, p. 61)

old	new	change
$x(1-p)$	n	increase
$x(1+p)$	n	decrease
$x(1-.25)$	24	
$x = 24/.75 = 24 (4/3) = 32$		

Fractions – A not A (31)

	clerical	not clerical	total
Before	1200	2400	3600
After	800	2400	3200
percent clerical = $800 / 3200$			

Fractions (35)

x	+ y	+ z	r	= total
$1/2$	$1/4$	$1/5$	$1/20$	t
			$t/20 = 10,000$	

Two-way Cross tabulation (284)

Entries could be percents, probabilities, fractions, counts

	exceed yes	exceed no	Total
ticket yes	.1t = .8e	0	.1t
ticket no	.2e		
Total	e		t
percent who exceed of total = e/t but e/t = .1/.8 = 12.5%			

Two-way Cross Tabs (153)

	≥4	<4	Total
Degree	(3) 18-13=5	(2) 16-3=13	18
No Degree	(4) 14-5 = 9	3	(5) 30-18=12
Total	14	(1) 16	30

3 numbers are needed in different rows and columns plus one number anywhere

Two-way Cross Tabs (248)

	Rented	Not Rented	Total
AC	(1) $2/3 \times 3/5 = 2/5$	(2) $x = 1/5$	$3/5$
No AC			
Total	$3/4$	(3) $1/4$	1
(4) $1/5 \div 1/4 = 4/5 = 80\%$			

Money (25)

	x	y	total cost
amount	x	12-x	12
cost	4x	2.80(12-x)	42
$4x + 2.8(12-x) = 42$ $1.2x = 42 - 33.6 = 8.4$ $x = 7$			

Tiered compensation or base/increment

	base	+ incr	= total
units	x	T-x	T
\$/unit	a	b	
total \$	ax	b(T-x)	ax-b(T-x)

Base + commission (172)

	base	+ incr	= total comp
a	360	.06(s-1000)	360 + .06(s-1000)
b	0	.08s	.08s
comp equal when $360 + .06(s-1000) = .08s$			

Motion (Daylight Savings Time D=ST) (12)

	D miles	S mile/hr	T hour
Yolanda	45-b	3	t
Bob	b	4	t-1
Total	45	3t + 4(t-1)	
$t = 7, b = (7-1) \times 4 = 24$			

Work / Rate Problems (2)

id	machines pipes men producers	× minutes hours days time	÷ bottles tanks jobs units	= mach-min/bottles pipe-hours/tank man-days/job producer-time/units
	6	1	270	1/45
	10	4	$x = 10 \times 4 \times 45$	1/45

Work / Rate Problems (16) Normalize tanks in one hour

pipe	pipes	hr	tanks	pipe-hr/tank
A	1	1	1/5	5
B	1	1	1/3	3
Combined	1	1	$1/5 + 1/3 = 8/15$	15/8
	1	$x=(2/3)/(8/15), x=5/4$	2/3	15/8

Work / Rate Problems (37) Normalize bolts in one second

machine	mach	sec	bolts	mach-sec/bolt
A	1	1	$120/40 = 3$	
B	1	1	$100/20 = 5$	
Combined	1	1	8	
	1	$x=200/8$	200	

Work /Rate Problems (103) Normalize jobs in one hour

mach id	mach	hr	jobs	machine-hr/job
A	1	1	1/4	
B	1	1	1/5	
C	1	1	1/6	
A&B comb	1	1	$x = 1/4 + 1/5 = 9/20$	

Age (1)

	Mario		
past	32+8-x		
present	32+8		
future			

Age (64)

	Rose	Sam	Tina
past			
present	2s, 2(t-3)	t-3	t
future+4	2s+4 = 2t-6+4	t-3+4	t+4
2t-6+4 > t+4 → rose older than Tina only if t > 6 Faster to just test with following numbers:			
present	2	1	4
future+4	4	5	8

Mixture (sample p. 66)

	A	B	Total
%	.15	.08	.10
Amount	n	5	n+5
Total	.15n	.08×5	.10(n+5)
$.15n + .4 = .1(n+5)$ $15n + 40 = 10n + 50$ $5n = 10, n = 2$			

Average with Missing values (13) avg = total/count

all except	discarded	count	total	average
x	d	6	x+d	(x+d)/6 = 8.5
x	-	5	x	x/5 = 7.2
(36+d)/6 = 8.5, 36+d = 51, d = 15				

Rate Problems and Units Checking

$\frac{\$}{shirt} \times shirts = \$$	$\frac{miles}{hour} \times hours = mile$	$\frac{min}{\left(\frac{min}{part}\right)} = parts$	$\frac{ser}{\left(\frac{ser}{can}\right)} = cans$
$hours \times \frac{60 min}{hour} = min$	$\frac{min}{\left(\frac{60 min}{hour}\right)} = hours$	$\frac{60 min}{1hour} = \frac{10 min}{xhour}$	$\frac{tks}{\left(\frac{tks}{hour}\right)} = hours$
$\frac{bolts}{machine \bullet min} \times machines \times min = bolts$		$\frac{\$}{mile} \times miles = \$$	$\frac{miles}{\left(\frac{miles}{hour}\right)} = hours$
$\frac{\$}{\left(\frac{\$}{min}\right)} = min$	$min \times \frac{\$}{min} = \$$		