

Solutions sheet No. 124		Mixed Trig Rule - Find an Side 2								
Working using $a\sin A = b\sin B$ or $a^2 = b^2 + c^2 - 2bccosA^\circ$										
No.	a	b	c	A	B	Equation	Calculator	a^2	a	Solution
1	a	25	28	42°		$a^2 = 28^2 + 42^2 - 2 \times 28 \times 42 \times \cos 42^\circ$	368.59724	$a^2 = 368.597...$	$a = 19.199...$	$a = 19.2$
2	b	22		48°	75°	$b = 22\sin 48^\circ / \sin 75^\circ$	16.925923		$b = 16.926...$	$b = 16.9$
3	c	36	40	47°		$c^2 = 40^2 + 47^2 - 2 \times 40 \times 47 \times \cos 47^\circ$	931.84472	$c^2 = 931.845...$	$c = 30.526...$	$c = 30.5$
4	d	15	28	94°		$d^2 = 28^2 + 94^2 - 2 \times 28 \times 94 \times \cos 94^\circ$	1067.5954	$d^2 = 1067.595...$	$d = 32.674...$	$d = 32.7$
5	e	15		65°	39°	$e = 15\sin 65^\circ / \sin 39^\circ$	21.60206		$e = 21.602...$	$e = 21.6$
6	f	10	12	38°		$f^2 = 12^2 + 38^2 - 2 \times 12 \times 38 \times \cos 38^\circ$	54.877419	$f^2 = 54.877...$	$f = 7.408...$	$f = 7.4$
7	g	100		72°	31°	$g = 100\sin 72^\circ / \sin 31^\circ$	184.65752		$g = 184.658...$	$g = 184.7$
8	h	36		52°	54°	$h = 36\sin 52^\circ / \sin 54^\circ$	35.065255		$h = 35.065...$	$h = 35.1$
9	i	6.25		82°	46°	$i = 6.25\sin 82^\circ / \sin 46^\circ$	8.6039663		$i = 8.604...$	$i = 8.6$
10	j	90	105	83°		$j^2 = 105^2 + 83^2 - 2 \times 105 \times 83 \times \cos 83^\circ$	16821.669	$j^2 = 16821.669...$	$j = 129.698...$	$j = 129.7$
11	k	42		70°	72°	$k = 42\sin 70^\circ / \sin 72^\circ$	41.498154		$k = 41.498...$	$k = 41.5$
12	l	28		33°	79°	$l = 28\sin 33^\circ / \sin 79^\circ$	15.535321		$l = 15.535...$	$l = 15.5$
13	m	25	32	103°		$m^2 = 32^2 + 103^2 - 2 \times 32 \times 103 \times \cos 103^\circ$	2008.9217	$m^2 = 2008.922...$	$m = 44.821...$	$m = 44.8$
14	n	36	37	81°		$n^2 = 37^2 + 81^2 - 2 \times 37 \times 81 \times \cos 81^\circ$	2248.2586	$n^2 = 2248.259...$	$n = 47.416...$	$n = 47.4$
15	p	12.2		43°	74°	$p = 12.2\sin 43^\circ / \sin 74^\circ$	8.6556866		$p = 8.656...$	$p = 8.7$
16	q	40	63	72°		$q^2 = 63^2 + 72^2 - 2 \times 63 \times 72 \times \cos 72^\circ$	4011.5543	$q^2 = 4011.554...$	$q = 63.337...$	$q = 63.3$
17	r	9.7	11.3	43°		$r^2 = 11.33^2 + 43^2 - 2 \times 11.33 \times 43 \times \cos 43^\circ$	61.705894	$r^2 = 61.706...$	$r = 7.855...$	$r = 7.9$
18	s	88		68°	76°	$s = 88\sin 68^\circ / \sin 76^\circ$	84.090012		$s = 84.09...$	$s = 84.1$
19	t	8.4		44°	67°	$t = 8.4\sin 44^\circ / \sin 67^\circ$	6.3390544		$t = 6.339...$	$t = 6.3$
20	u	17	19	87°		$u^2 = 19^2 + 87^2 - 2 \times 19 \times 87 \times \cos 87^\circ$	616.19097	$u^2 = 616.191...$	$u = 24.823...$	$u = 24.8$