

Solutions sheet No. 123				Mixed Trig Rule - Find an Side 1						
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	12		42°	81°	$a = 12\sin 42^\circ / \sin 81^\circ$	8.1296568		$a = 8.13\dots$	$a = 8.1$
2	b	25		46°	74°	$b = 25\sin 46^\circ / \sin 74^\circ$	18.70822		$b = 18.708\dots$	$b = 18.7$
3	c	43	45	47°		$c^2 = 45^2 + 47^2 - 2 \times 45 \times 47 \times \cos 47^\circ$	1234.6663	$c^2 = 1234.666\dots$	$c = 35.138\dots$	$c = 35.1$
4	d	20		29°	82°	$d = 20\sin 29^\circ / \sin 82^\circ$	9.7914824		$d = 9.791\dots$	$d = 9.8$
5	e	75	85	43°		$e^2 = 85^2 + 43^2 - 2 \times 85 \times 43 \times \cos 43^\circ$	3525.2403	$e^2 = 3525.24\dots$	$e = 59.374\dots$	$e = 59.4$
6	f	8.7		46°	55°	$f = 8.7\sin 46^\circ / \sin 55^\circ$	7.6399202		$f = 7.64\dots$	$f = 7.6$
7	g	21	27	72°		$g^2 = 27^2 + 72^2 - 2 \times 27 \times 72 \times \cos 72^\circ$	819.57473	$g^2 = 819.575\dots$	$g = 28.628\dots$	$g = 28.6$
8	h	33	52	68°		$h^2 = 52^2 + 68^2 - 2 \times 52 \times 68 \times \cos 68^\circ$	2507.3502	$h^2 = 2507.35\dots$	$h = 50.073\dots$	$h = 50.1$
9	i	65		84°	44°	$i = 65\sin 84^\circ / \sin 44^\circ$	93.058582		$i = 93.059\dots$	$i = 93.1$
10	j	75	90	84°		$j^2 = 90^2 + 84^2 - 2 \times 90 \times 84 \times \cos 84^\circ$	12313.866	$j^2 = 12313.866\dots$	$j = 110.968\dots$	$j = 111.0$
11	k	45		69°	77°	$k = 45\sin 69^\circ / \sin 77^\circ$	43.116184		$k = 43.116\dots$	$k = 43.1$
12	l	55		32°	79°	$l = 55\sin 32^\circ / \sin 79^\circ$	29.691068		$l = 29.691\dots$	$l = 29.7$
13	m	27	32	98°		$m^2 = 32^2 + 98^2 - 2 \times 32 \times 98 \times \cos 98^\circ$	1993.4911	$m^2 = 1993.491\dots$	$m = 44.649\dots$	$m = 44.6$
14	n	150		40°	76°	$n = 150\sin 40^\circ / \sin 76^\circ$	99.369851		$n = 99.37\dots$	$n = 99.4$
15	p	15.5		41°	75°	$p = 15.5\sin 41^\circ / \sin 75^\circ$	10.527635		$p = 10.528\dots$	$p = 10.5$
16	q	13	15	76°		$q^2 = 15^2 + 76^2 - 2 \times 15 \times 76 \times \cos 76^\circ$	299.65046	$q^2 = 299.65\dots$	$q = 17.31\dots$	$q = 17.3$
17	r	8.3	9.8	43°		$r^2 = 9.8^2 + 43^2 - 2 \times 9.8 \times 43 \times \cos 43^\circ$	45.95338	$r^2 = 45.953\dots$	$r = 6.779\dots$	$r = 6.8$
18	s	30		68°	74°	$s = 30\sin 68^\circ / \sin 74^\circ$	28.936465		$s = 28.936\dots$	$s = 28.9$
19	t	7.3	7.9	38°		$t^2 = 7.9^2 + 38^2 - 2 \times 7.9 \times 38 \times \cos 38^\circ$	24.81084	$t^2 = 24.811\dots$	$t = 4.981\dots$	$t = 5.0$
20	u	38		61°	65°	$u = 38\sin 61^\circ / \sin 65^\circ$	36.671371		$u = 36.671\dots$	$u = 36.7$