

Solutions sheet No. 130				Mixed Sine and Cosine Rules - Find an Angle 4 (degrees & minutes)				
Working using $a\sin A = b\sin B$ or $\cos A = \frac{b^2 + c^2 - a^2}{2bc}$								
No.	a	b	c	A	Equation	Calulator	Degrees	Solution
1	17	22	24		$\cos a^\circ = (22^2 + 24^2 - 17^2)/(2 \times 22 \times 24)$	43.104079	43°6'	$a^\circ = 43^\circ 6'$
2	18	15		31°34'	$\sin b^\circ = (18 \sin 31^\circ 34')/15$	38.916589	38°55'	$b^\circ = 38^\circ 55'$
3	26	33	38		$\cos c^\circ = (33^2 + 38^2 - 26^2)/(2 \times 33 \times 38)$	42.231889	42°14'	$c^\circ = 42^\circ 14'$
4	31	40		82°36'	$\sin d^\circ = (31 \sin 82^\circ 36')/40$	50.223424	50°13'	$d^\circ = 50^\circ 13'$
5	30	28	45		$\cos e^\circ = (28^2 + 45^2 - 30^2)/(2 \times 28 \times 45)$	40.752221	40°45'	$e^\circ = 40^\circ 45'$
6	30	54	56		$\cos f^\circ = (54^2 + 56^2 - 30^2)/(2 \times 54 \times 56)$	31.586338	31°35'	$f^\circ = 31^\circ 35'$
7	38	48		59°36'	$\sin g^\circ = (38 \sin 59^\circ 36')/48$	43.064663	43°4'	$g^\circ = 43^\circ 4'$
8	95	65		29°3'	$\sin h^\circ = (95 \sin 29^\circ 3')/65$	45.209142	45°13'	$h^\circ = 45^\circ 13'$
9	37	32	42		$\cos i^\circ = (32^2 + 42^2 - 37^2)/(2 \times 32 \times 42)$	58.136204	58°8'	$i^\circ = 58^\circ 8'$
10	42	48		61°36'	$\sin j^\circ = (42 \sin 61^\circ 36')/48$	50.326284	50°20'	$j^\circ = 50^\circ 20'$
11	16.5	11.1	12.4		$\cos k^\circ = (11.1^2 + 12.4^2 - 16.5^2)/(2 \times 11.1 \times 12.4)$	89.017548	89°1'	$k^\circ = 89^\circ 1'$
12	40	50		75°48'	$\sin l^\circ = (40 \sin 75^\circ 48')/50$	50.855494	50°51'	$l^\circ = 50^\circ 51'$
13	34	28	38		$\cos m^\circ = (28^2 + 38^2 - 34^2)/(2 \times 28 \times 38)$	59.750967	59°45'	$m^\circ = 59^\circ 45'$
14	35	36	37		$\cos n^\circ = (36^2 + 37^2 - 35^2)/(2 \times 36 \times 37)$	57.279557	57°17'	$n^\circ = 57^\circ 17'$
15	4.8	6.4		70°52'	$\sin p^\circ = (4.8 \sin 70^\circ 52')/6.4$	45.118587	45°7'	$p^\circ = 45^\circ 7'$
16	60	48		42°24'	$\sin q^\circ = (60 \sin 42^\circ 24')/48$	57.445287	57°27'	$q^\circ = 57^\circ 27'$
17	6.9	8.2	8.3		$\cos r^\circ = (8.2^2 + 8.3^2 - 6.9^2)/(2 \times 8.2 \times 8.3)$	49.435131	49°26'	$r^\circ = 49^\circ 26'$
18	12.5	10.5		43°54'	$\sin s^\circ = (12.5 \sin 43^\circ 54')/10.5$	55.63702	55°38'	$s^\circ = 55^\circ 38'$
19	95	125	130		$\cos t^\circ = (125^2 + 130^2 - 95^2)/(2 \times 125 \times 130)$	43.690895	43°41'	$t^\circ = 43^\circ 41'$
20	9.8	7.6		36°45'	$\sin u^\circ = (9.8 \sin 36^\circ 45')/7.6$	50.490925	50°29'	$u^\circ = 50^\circ 29'$