

Solutions for GeoWorkSheet No. 111

Solutions sheet No. 111				Mixed Trig Ratio and Pythagoras' Rule						
				Working using $\sin A = \frac{O}{H}$ or $\cos A = \frac{A}{H}$ or $\tan A = \frac{O}{A}$ or $a^2 = b^2 + c^2$						
No.	Opp	Adj	Hyp	Angle	Equation	Working	Working	Calculator	1 dp	Solution
1	12	16	a		$a^2 = 12^2 + 16^2$	$a^2 = 144 + 256$	$a = \sqrt{400}$	20	20	$a = 20$
2	20	b	25		$25^2 = b^2 + 20^2$	$b^2 = 625 - 400$	$b = \sqrt{225}$	15	15	$b = 15$
3	20	c		48°	$\tan 48^\circ = \frac{c}{20}$	$c = 20 \times \tan 48^\circ$		22.2122502	22.2	$c = 22.2$
4	d		50	41°	$\sin 41^\circ = \frac{d}{50}$	$d = 50 \times \sin 41^\circ$		47.2759287	47.3	$d = 47.3$
5	10	10	e		$e^2 = 10^2 + 10^2$	$e^2 = 100 + 100$	$e = \sqrt{200}$	14.1421356	14.1	$e = 14.1$
6	f	15	24		$24^2 = f^2 + 15^2$	$f^2 = 576 - 225$	$f = \sqrt{351}$	18.7349939	18.7	$f = 18.7$
7		g	35	48°	$\cos 48^\circ = \frac{g}{35}$	$g = 35 \times \cos 48^\circ$		23.4195712	23.4	$g = 23.4$
8	h	100		43°	$\tan 43^\circ = \frac{h}{100}$	$h = 100 \times \tan 43^\circ$		93.251508	93.3	$h = 93.3$
9	i	7	25		$25^2 = i^2 + 7^2$	$i^2 = 625 - 49$	$i = \sqrt{576}$	24	24	$i = 24$
10	25		j	38°	$\sin 38^\circ = \frac{j}{25}$	$j = 25 \times \sin 38^\circ$		15.391536	15.4	$j = 15.4$
11		k	125	68°	$\cos 68^\circ = \frac{k}{125}$	$k = 125 \times \cos 68^\circ$		46.825824	46.8	$k = 46.8$
12	35	40	l		$l^2 = 35^2 + 40^2$	$l^2 = 1225 + 1600$	$l = \sqrt{3825}$	61.8465843	61.8	$l = 61.8$
13	m	75	120		$120^2 = m^2 + 75^2$	$m^2 = 14400 - 5625$	$m = \sqrt{8775}$	93.6749699	93.7	$m = 93.7$
14	n	8.7	12.8		$12.8^2 = n^2 + 8.7^2$	$n^2 = 163.84 - 75.69$	$n = \sqrt{88.15}$	9.3888231	9.4	$n = 9.4$
15	p	11.7		46°	$\tan 46^\circ = \frac{p}{11.7}$	$p = 11.7 \times \tan 46^\circ$		12.11570467	12.1	$p = 12.1$
16	q		31.2	42°	$\sin 42^\circ = \frac{q}{31.2}$	$q = 31.2 \times \sin 42^\circ$		20.8768749	20.9	$q = 20.9$
17	r		5.1	39°	$\sin 39^\circ = \frac{r}{5.1}$	$r = 5.1 \times \sin 39^\circ$		3.20953399	3.2	$r = 3.2$
18	s	6.8	9.4		$9.4^2 = s^2 + 6.8^2$	$s^2 = 88.36 - 46.24$	$s = \sqrt{42.12}$	6.4899922	6.5	$s = 6.5$
19		t	2.3	71°	$\cos 71^\circ = \frac{t}{2.3}$	$t = 2.3 \times \cos 71^\circ$		0.74880675	0.7	$t = 0.7$
20	u		37.5	47°	$\sin 47^\circ = \frac{u}{37.5}$	$u = 37.5 \times \sin 47^\circ$		27.42576381	27.4	$u = 27.4$