

ESERCIZI PROPOSTI

Angoli e loro misure

1) Converti le seguenti misure di angoli, espresse in forma decimale, in gradi, primi e secondi:

1) 10,46°	[10° 27' 36"]
2) 55,25°	[55° 15']
3) 125,96°	[125° 57' 36"]
4) 87,13°	[87° 7' 48"]
5) 342,666°	[342° 39' 58"]
6) 7,84°	[7° 50' 24"]
7) 212,21°	[212° 12' 36"]
8) 146,50°	[146° 30']
9) 87,25°	[87° 15']
10) 54,1°	[54° 6']
11) 45,27°	[20° 16' 12"]
12) 48,3°	[48° 18']
13) 18,195°	[18° 11' 42"]
14) 41,372°	[41° 22' 19"]
15) 71,675°	[71° 40' 30"]

2) Converti le seguenti misure di angoli, espresse in gradi, primi e secondi, in forma decimale. Arrotonda il risultato alla seconda cifra decimale.

16) 219° 59' 06"	[219,985°]
17) 31° 12' 36"	[31,21°]
18) 112° 38' 15"	[112,6375°]
19) 60° 30'	[60,5°]
20) 21° 38' 11"	[≅ 21,63638°]
21) 98° 42'	[98,7°]
22) 56° 52' 12"	[56,87°]
23) 135° 59' 30"	[≅ 135,9916°]
24) 76° 02' 45"	[≅ 76,04583°]
25) 181° 09' 36"	[181,16°]
26) 12° 12'	[12,2°]
27) 158° 44' 22"	[≅ 158,7394°]
28) 27) 75° 32' 18"	[≅ 75,5383°]
29) 84° 24'	[84,4°]
30) 219° 59' 06"	[71° 40' 30"]
32) 219° 59' 06"	[219,985°]
33) 31° 12' 36"	[31,21°]
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36) 21° 38' 11"	[≅ 21,63638°]
37) 98° 42'	[98,7°]
38) 56° 52' 12"	[56,87°]
39) 135° 59' 30"	[≅ 135,9916°]
40) 76° 02' 45"	[≅ 76,04583°]
41) 181° 09' 36"	[181,16°]
42) 12° 12'	[12,2°]
43) 158° 44' 22"	[≅ 158,7394°]
44) 75° 32' 18"	[≅ 75,5383°]
45) 84° 24'	[84,4°]

3) Calcola il valore delle restanti funzioni goniometriche α :

1. $\operatorname{sen}\alpha = \frac{1}{3}$	$0 < \alpha < 90^\circ$	$\cos\alpha = \frac{2\sqrt{2}}{3}, \operatorname{tg}\alpha = \frac{\sqrt{2}}{4}, \operatorname{cotg}\alpha = 2\sqrt{2}$
2. $\operatorname{sen}\alpha = \frac{1}{4}$	$0 < \alpha < 90^\circ$	$\cos\alpha = \frac{\sqrt{15}}{4}, \operatorname{tg}\alpha = \frac{\sqrt{15}}{15}, \operatorname{cotg}\alpha = \sqrt{15}$
3. $\operatorname{sen}\alpha = \frac{2}{3}$	$90^\circ < \alpha < 180^\circ$	$\cos\alpha = -\frac{\sqrt{5}}{3}, \operatorname{tg}\alpha = -\frac{2\sqrt{5}}{5}, \operatorname{cotg}\alpha = -\frac{\sqrt{5}}{2}$
4. $\operatorname{sen}\alpha = \frac{3}{5}$	$90^\circ < \alpha < 180^\circ$	$\cos\alpha = -\frac{4}{5}, \operatorname{tg}\alpha = -\frac{3}{4}, \operatorname{cotg}\alpha = -\frac{4}{3}$
5. $\operatorname{sen}\alpha = -\frac{4}{5}$	$180 < \alpha < 270^\circ$	$\cos\alpha = -\frac{3}{5}, \operatorname{tg}\alpha = \frac{4}{3}, \operatorname{cotg}\alpha = \frac{3}{4}$
6. $\operatorname{sen}\alpha = -\frac{1}{5}$	$180 < \alpha < 270^\circ$	$\cos\alpha = -\frac{2\sqrt{6}}{5}, \operatorname{tg}\alpha = \frac{\sqrt{6}}{12}, \operatorname{cotg}\alpha = 2\sqrt{6}$
7. $\operatorname{sen}\alpha = -\frac{4}{5}$	$270^\circ < \alpha < 360^\circ$	$\cos\alpha = \frac{1}{2}, \operatorname{tg}\alpha = -\sqrt{3}, \operatorname{cotg}\alpha = -\frac{\sqrt{3}}{3}$
8. $\cos\alpha = \frac{\sqrt{2}}{2}$	$0 < \alpha < 90^\circ$	$\operatorname{sen}\alpha = \frac{\sqrt{2}}{2}, \operatorname{tg}\alpha = 1, \operatorname{cotg}\alpha = 1$
9. $\cos\alpha = \frac{2\sqrt{2}}{3}$	$0 < \alpha < 90^\circ$	$\operatorname{sen}\alpha = \frac{1}{3}, \operatorname{tg}\alpha = \frac{\sqrt{2}}{4}, \operatorname{cotg}\alpha = 2\sqrt{2}$
10. $\cos\alpha = -\frac{1}{3}$	$90^\circ < \alpha < 180^\circ$	$\operatorname{sen}\alpha = \frac{2\sqrt{2}}{3}, \operatorname{tg}\alpha = -2\sqrt{2}, \operatorname{cotg}\alpha = -\frac{\sqrt{2}}{4}$
11. $\cos\alpha = -\frac{3}{4}$	$90^\circ < \alpha < 180^\circ$	$\operatorname{sen}\alpha = \frac{\sqrt{7}}{4}, \operatorname{tg}\alpha = -\frac{\sqrt{7}}{3}, \operatorname{cotg}\alpha = -\frac{3\sqrt{7}}{7}$
12. $\cos\alpha = -\frac{3}{4}$	$180^\circ < \alpha < 270^\circ$	$\operatorname{sen}\alpha = -\frac{\sqrt{21}}{5}, \operatorname{tg}\alpha = \frac{\sqrt{21}}{2}, \operatorname{cotg}\alpha = \frac{2\sqrt{21}}{21}$

13. $\cos \alpha = \frac{\sqrt{2}}{3}$ $270^\circ < \alpha < 360^\circ$	$\operatorname{sen} \alpha = -\frac{\sqrt{7}}{3}$, $\operatorname{tg} \alpha = -\frac{\sqrt{14}}{2}$, $\operatorname{cotg} \alpha = -\frac{\sqrt{14}}{7}$
14. $\cos \alpha = \frac{\sqrt{3}}{2}$ $270^\circ < \alpha < 360^\circ$	$\operatorname{sen} \alpha = \frac{\sqrt{6}}{3}$, $\operatorname{tg} \alpha = -2$, $\operatorname{cotg} \alpha = \frac{1}{2}$

4) Senza utilizzare la calcolatrice, determina i valori delle seguenti funzioni goniometriche:

1a $\operatorname{sen}(1890^\circ)$	1b $\operatorname{sen}(1350^\circ)$	1c $\operatorname{sen}(4050^\circ)$	1	-1	1
2a $\operatorname{sen}(3285^\circ)$	2b $\operatorname{sen}(1470^\circ)$	2c $\operatorname{sen}(1870^\circ)$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	$\frac{\sqrt{3}}{2}$
3a $\cos(1530^\circ)$	3b $\cos(1980^\circ)$	3c $\cos(7110^\circ)$	0	-1	0
4a $\cos(2910^\circ)$	4b $\cos(1845^\circ)$	4c $\cos(3300^\circ)$	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$
5a $\tan(3780^\circ)$	5b $\tan(930^\circ)$	5c $\tan(2025^\circ)$	0	$\frac{\sqrt{3}}{3}$	1
6a $\tan(150^\circ)$	6b $\cot(885^\circ)$	6c $\cot(1110^\circ)$	$-\frac{\sqrt{3}}{3}$	-1	$\sqrt{3}$
7a $\operatorname{sen}(315^\circ)$	7b $\operatorname{sen}(405^\circ)$	7c $\operatorname{sen}(-390^\circ)$	$-\frac{\sqrt{2}}{2}$	$\frac{\sqrt{2}}{2}$	$-\frac{1}{2}$
8a $\cos(225^\circ)$	8b $\cos(150^\circ)$	8c $\cos(480^\circ)$	$-\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{3}}{2}$	$-\frac{1}{2}$
9a $\tan(1680^\circ)$	9b $\tan(-390^\circ)$	9c $\tan(480^\circ)$	$\sqrt{3}$	$-\frac{\sqrt{3}}{3}$	$-\sqrt{3}$