

Trigonometria

Senza usare la calcolatrice risolvere i seguenti triangoli rettangoli, in cui b e c rappresentano i cateti ed a l'ipotenusa:

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| 19. $b = 10\sqrt{2}$; $c = \frac{10\sqrt{6}}{3}$ | 20. $a = 4$; $c = 2\sqrt{3}$ |
| 21. $c = 18$; $\beta = 75^\circ$ | 22. $a = 32$; $\beta = 72^\circ$ |
| 23. $a = 20$; $\beta = 30^\circ$ | 24. $b = 2$; $\gamma = 15^\circ$ |
| 25. $a = 2\sqrt{3}$; $\beta = 30^\circ$ | 26. $b = 1$; $\gamma = 22^\circ 30'$ |
| 27. $a = 4$; $c = \sqrt{5} - 1$ | 28. $b = 2$; $c = 4 + 2\sqrt{3}$ |
| 29. $b = 1$; $c = \sqrt{5 + 2\sqrt{5}}$ | 30. $a = 2\sqrt{2}$; $b = \sqrt{3} + 1$ |
| 31. $b = \frac{\sqrt{2}}{2}$; $\gamma = 67^\circ 30'$ | 32. $a = 2(\sqrt{5} - 1)$; $b = 2$ |
| 33. $a = 8$; $\gamma = 18^\circ$ | 34. $a = 2\sqrt{2}$; $\beta = 15^\circ$ |
| 35. $b = 2 + \sqrt{2}$; $\beta = 67^\circ 30'$ | 36. $c = 2$; $\beta = 22^\circ 30'$ |
| 37. $b = \sqrt{10}$; $a = 2\sqrt{5 + \sqrt{5}}$ | 38. $c = \sqrt{5}$; $b = \sqrt{25 + 10\sqrt{5}}$ |
| 39. $b = 3 + \sqrt{3}$; $\gamma = 15^\circ$ | 40. $b = \sqrt{3} + 1$; $\beta = 75^\circ$ |
| 41. $a = 8$; $\gamma = 72^\circ$ | 42. $a = 40$; $b = 20$ |
| 43. $a = 15$; $\gamma = \arcsin \frac{3}{5}$ | 44. $a = 8$; $c = 4\sqrt{2}$ |
| 45. $a = 10$; $b = 5$ | 46. $b = 4(\sqrt{6} + \sqrt{2})$; $c = 4(\sqrt{6} - \sqrt{2})$ |
| 47. $b = 12$; $\gamma = \arccos \frac{4}{5}$ | 48. $b = 15$; $\gamma = \arctan \frac{12}{5}$ |

Usando la calcolatrice risolvere i seguenti triangoli rettangoli:

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|---------------------------------------|---|
| 57. $a = 10$; $b = 6$ | 58. $b = 15$; $c = 7$ |
| 59. $a = 12$; $\beta = 62^\circ$ | 60. $b = 32$; $\gamma = 73^\circ$ |
| 61. $a = 1$; $\gamma = 15^\circ 22'$ | 62. $c = 15,22$; $\gamma = 15^\circ 22'$ |
| 63. $b = 8$; $\beta = 48^\circ$ | 64. $a = 15$; $\beta = 85^\circ 30'$ |
| 65. $b = 30$; $\gamma = 10^\circ$ | 66. $a = 5$; $b = 3$ |
| 67. $b = 45$; $c = 24$ | 68. $a = 25$; $\gamma = 58^\circ 7' 32''$ |
| 69. $a = 17$; $c = 15$ | 70. $c = 12,21$; $\gamma = 32^\circ 33'$ |
| 71. $a = 10$; $\gamma = 34^\circ$ | 72. $b = 45,83$; $\beta = 44^\circ 59' 59''$ |

Triangolo rettangolo

Risposte

19. $\beta = 60^\circ$; $\gamma = 30^\circ$; $a = \frac{20\sqrt{6}}{3}$
20. $b = 2$; $\gamma = 60^\circ$; $\beta = 30^\circ$
21. $\gamma = 15^\circ$; $b = 18(2 + \sqrt{3})$; $a = 18\sqrt{2}(\sqrt{3} + 1)$
22. $\gamma = 18^\circ$; $b = 8\sqrt{2}\sqrt{5 + \sqrt{5}}$; $c = 8(\sqrt{5} - 1)$
23. $\gamma = 60^\circ$; $b = 10$; $c = 10\sqrt{3}$
24. $c = 2(2 - \sqrt{3})$; $\beta = 75^\circ$; $a = 2\sqrt{2}(\sqrt{3} - 1)$
25. $\gamma = 60^\circ$; $b = \sqrt{3}$; $c = 3$
26. $a = \sqrt{2} \cdot \sqrt{2 - \sqrt{2}}$; $c = \sqrt{2} - 1$; $\beta = 67^\circ 30'$
27. $\beta = 72^\circ$; $b = \sqrt{2} \cdot \sqrt{5 + \sqrt{5}}$; $\gamma = 18^\circ$
28. $\gamma = 75^\circ$; $a = 2\sqrt{2}(\sqrt{3} + 1)$; $\beta = 15^\circ$
29. $\beta = 18^\circ$; $\gamma = 72^\circ$; $a = \sqrt{5} + 1$
30. $c = \sqrt{3} - 1$; $\beta = 75^\circ$; $\gamma = 15^\circ$
31. $\beta = 22^\circ 30'$; $c = \frac{2 + \sqrt{2}}{2}$; $a = \sqrt{2 + \sqrt{2}}$
32. $\beta = 54^\circ$; $\gamma = 36^\circ$; $c = 2\sqrt{5 - 2\sqrt{5}}$
33. $\beta = 72^\circ$; $b = 2\sqrt{10 + 2\sqrt{5}}$; $c = 2(\sqrt{5} - 1)$
34. $\gamma = 75^\circ$; $b = \sqrt{3} - 1$; $c = \sqrt{3} + 1$
35. $\gamma = 22^\circ 30'$; $c = \sqrt{2}$; $a = 2\sqrt{2 + \sqrt{2}}$
36. $\gamma = 67^\circ 30'$; $b = 2(\sqrt{2} - 1)$; $a = 2\sqrt{4 - 2\sqrt{2}}$
37. $c = \sqrt{10 + 4\sqrt{5}}$; $\beta = 36^\circ$; $\gamma = 54^\circ$
38. $a = 5 + \sqrt{5}$; $\beta = 72^\circ$; $\gamma = 18^\circ$
39. $\beta = 75^\circ$; $a = 2\sqrt{6}$; $c = 3 - \sqrt{3}$
40. $\gamma = 15^\circ$; $c = \sqrt{3} - 1$; $a = 2\sqrt{2}$
41. $\beta = 18^\circ$; $b = 2(\sqrt{5} - 1)$; $c = 2\sqrt{10 + 2\sqrt{2}}$
42. $c = 20\sqrt{3}$; $\beta = 30^\circ$; $\gamma = 60^\circ$
43. $\beta = \arcsin \frac{4}{5}$; $b = 12$; $c = 9$
44. $b = 4\sqrt{2}$; $\beta = \gamma = 45^\circ$
45. $c = 5\sqrt{3}$; $\beta = 30^\circ$; $\gamma = 60^\circ$
46. $\beta = 75^\circ$; $\gamma = 15^\circ$; $a = 16$
47. $\beta = \arcsin \frac{4}{5}$; $a = 15$; $c = 9$
48. $c = 36$; $a = 39$; $\beta = \arctan \frac{5}{12}$
57. $\beta \cong 36^\circ 52' 12''$; $\gamma \cong 53^\circ 7' 48''$; $c = 8$
58. $a \cong 16,55295$; $\beta = 64^\circ 58' 59''$; $\gamma = 25^\circ 1' 1''$
59. $\gamma = 28^\circ$; $b \cong 10,59538$; $c \cong 5,63366$
60. $\beta = 17^\circ$; $a \cong 109,44960$; $c = 104,66720$
61. $\beta = 74^\circ 38'$; $b \cong 0,96425$; $c \cong 0,26500$
62. $\beta = 74^\circ 38'$; $a \cong 57,43505$; $b \cong 55,38170$
63. $\gamma = 42^\circ$; $a = 10,76506$; $c \cong 7,20325$
64. $\gamma = 4^\circ 30'$; $b \cong 14,95375$; $c \cong 1,17689$
65. $\beta = 80^\circ$; $a \cong 30,46279$; $c \cong 5,28981$
66. $c = 4$; $\beta \cong 36^\circ 52' 12''$; $\gamma = 53^\circ 7' 48''$
67. $a = 51$; $\beta \cong 61^\circ 55' 39''$; $\gamma = 28^\circ 4' 21''$
68. $\beta = 31^\circ 52' 28''$; $c \cong 21,23018$; $b \cong 13,20150$
69. $b = 8$; $\beta \cong 28^\circ 4' 21''$; $\gamma \cong 61^\circ 55' 39''$
70. $\beta = 57^\circ 27'$; $a \cong 22,69369$; $b \cong 19,12900$
71. $\beta = 56^\circ$; $b \cong 8,29038$; $c \cong 5,59193$
72. $\gamma = 45^\circ 1'$; $a \cong 64,81375$; $c \cong 45,83046$

Con l'uso del calcolatore, o delle tavole logaritmo-goniometriche, risolvere il triangolo rettangolo ABC, nei seguenti casi:

1°) Date le misure b e c dei due cateti:

1. $b = 31,25$; $c = 21,644$. [$a = 38,013$; $\beta = 55^\circ 17' 36''$; $\gamma = 34^\circ 42' 24''$]

2. $b = 48,37$; $c = 32,63$. [$a = 58,35$; $\beta = 55^\circ 59' 48''$; $\gamma = 34^\circ 12''$]

3. $b = 284,8$; $c = 240,1$. [$a = 372,504$; $\beta = 49^\circ 52' 3''$; $\gamma = 40^\circ 7' 57''$]

2°) Date le misure a e b dell'ipotenusa e di un cateto:

4. $a = 115,91$; $b = 93,29$. [$\beta = 53^\circ 35' 44''$; $\gamma = 36^\circ 24' 16''$; $c = 68,79$]

5. $a = 94,435$; $b = 85,547$. [$\beta = 64^\circ 56' 33''$; $\gamma = 25^\circ 3' 27''$; $c = 39,996$]

6. $a = 195,86$; $b = 35,748$. [$\beta = 10^\circ 30' 59''$; $\gamma = 79^\circ 29' 1''$; $c = 192,57$]

3°) Date le misure b e β di un cateto e di un angolo acuto:

7. $b = 130$; $\beta = 46^\circ 43' 29''$. [$c = 122,4$; $\gamma = 43^\circ 16' 31''$; $a = 178,55$]

8. $b = 71,25$; $\beta = 50^\circ 41' 21''$. [$a = 92,1$; $c = 58,34$; $\gamma = 39^\circ 18' 39''$]

9. $b = 2,189$; $\beta = 44^\circ 35' 14''$. [$\gamma = 45^\circ 24' 46''$; $a = 3,118$; $c = 2,221$]

4°) Date le misure a e β dell'ipotenusa e di un angolo acuto:

10. $a = 55$; $\beta = 53^\circ 7' 48''$. [$b = 44$; $c = 33$; $\gamma = 36^\circ 52' 12''$]

11. $a = 22,61$; $\beta = 17^\circ 44' 35''$. [$b = 6,89$; $c = 21,535$; $\gamma = 72^\circ 15' 25''$]

12. $a = 26,25$; $\beta = 36^\circ 52' 11''$. [$b = 15,75$; $c = 21$; $\gamma = 53^\circ 7' 49''$]