Risoluzione di triangoli qualsiasi

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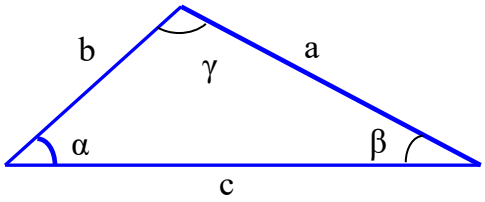
in riferimento alla figura, risolvi i triangoli di cui sono noti:



1	$a = 4\sqrt{3} \quad b = 4 \quad c = 4$	$\alpha = 120° \ \beta = 30° \ \gamma = 30°$
2	$a = \sqrt{3} \quad b = 2 \quad \gamma = 30°$	$c = 1 \ \alpha = 60° \ \beta = 90°$
3	$a = 4 \quad b = 4\sqrt{2} \quad \beta = 45°$	$c = 2\sqrt{6} + 2\sqrt{2} \quad \alpha = 30° \quad \gamma = 105°$
4	$a = 2 \quad b = 2 \quad \alpha = 75°$	$c = 2\sqrt{2 - \sqrt{3}} \quad \beta = 75° \ \gamma = 30°$
5	$a = 2\sqrt{3} \quad c = 3\sqrt{2} \quad \alpha = 45°$	$b = 3 + \sqrt{3} \quad \beta = 75° \quad \gamma = 60°$
6	$a = \sqrt{3} + 1 \quad c = \sqrt{6} \quad \beta = 45°$	$b = 2 \quad \alpha = 75° \ \gamma = 60°$
7	$a = 2 \quad c = 2\sqrt{2} \quad \gamma = 45°$	$b = \sqrt{6} + \sqrt{2} \quad \alpha = 30° \ \beta = 105°$
8	$b = 3 - \sqrt{3} \quad c = 3\sqrt{2} \quad \alpha = 45°$	$a = 2\sqrt{3} \quad \beta = 75° \quad \gamma = 60°$
9	$b = \sqrt{2} \quad c = \sqrt{3} + 1 \quad \beta = 30°$	$a_1 = 1 + \sqrt{3} \quad \alpha_1 = \gamma_1 = 75°$ $a_2 = 2 \quad \alpha_2 = 45° \quad \gamma_2 = 105°$
10	$b = 2\sqrt{2} \quad c = 2\sqrt{3} \quad \gamma = 60°$	$a = \sqrt{6} + \sqrt{2} \quad \alpha = 75° \quad \beta = 45°$
11	$a = 2\sqrt{6} \quad \alpha = 30° \quad \beta = 120°$	$b = 6\sqrt{2} \quad c = 2\sqrt{6} \quad \gamma = 30°$
12	$a = 2 \quad \alpha = 45° \quad \beta = 75°$	$b = 2(\sqrt{3} + 1) \quad c = \sqrt{6} \quad \gamma = 60°$

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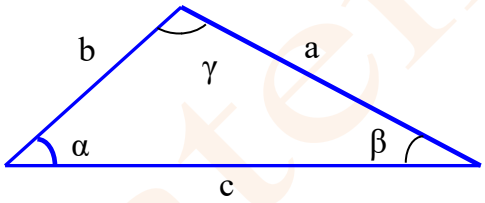
13	$a = 2\sqrt{3} + 3 \quad \beta = 15° \quad \gamma = 90°$	$b = \frac{2\sqrt{3}+3}{4} \quad c = 3\sqrt{2} + \sqrt{6} \quad \alpha = 75°$
14	$b = 6\sqrt{2} \quad \alpha = 60° \quad \beta = 45°$	$a = 6\sqrt{3} \quad c = 3(\sqrt{2} + \sqrt{6}) \quad \gamma = 75°$
15	$b = \sqrt{6} \quad \beta = 30° \quad \gamma = 45°$	$a = \frac{3\sqrt{2}+\sqrt{6}}{2} \quad c = \sqrt{6} \quad \alpha = 105°$
16	$b = 10 \quad \alpha = 15° \quad \gamma = 120°$	$a = 5(\sqrt{3} - 1) \quad c = 5\sqrt{6} \quad \beta = 45°$
17	$c = 2\sqrt{6} \quad \alpha = 30° \quad \beta = 120°$	$a = 2\sqrt{6} \quad b = 6\sqrt{2} \quad \gamma = 30°$
18	$c = 6\sqrt{3} \quad \alpha = 45° \quad \gamma = 60°$	$a = 6\sqrt{2} \quad b = 3(\sqrt{6} + \sqrt{2}) \quad \beta = 75°$
19	$c = \sqrt{2} \quad \beta = 45° \quad \gamma = 75°$	$a = 3 - \sqrt{3} \quad b = \sqrt{6} - \sqrt{2} \quad \alpha = 60°$
20	$a = 2\sqrt{3} \quad b = 3\sqrt{2} \quad c = 3 + \sqrt{3}$	$\alpha = 45° \quad \beta = 60° \quad \gamma = 75°$

calcolare il perimetro e l'area dei seguenti triangoli acutangoli



21	$b = \frac{4}{5}$ $c = 1$ $\cos\alpha = \frac{3}{5}$	$2p = \frac{9+\sqrt{17}}{5}$ $area = \frac{8}{25}$
22	$a = \frac{3}{2}$ $\cos\alpha = \frac{40}{41}$ $\cos\beta = \frac{4}{5}$	$2p = \frac{108}{10}$ $area = \frac{117}{50}$

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23	$a = 5$ $c = 1$ $tg\,\beta = \frac{7}{24}$	$2p = 6 + \frac{\sqrt{82}}{\sqrt{5}}$ $area = \frac{7}{10}$
24	$c = \frac{185}{63}$ $tg\,\gamma = \frac{4}{3}$ $tg\,\beta = \frac{104}{153}$	$2p = \frac{26}{3}$ $area = \frac{572}{189}$
25	$a = \frac{1}{4}$ $b = \frac{1}{6}$ $c = 2$	$impossibile$
26	$a = \frac{9}{4}$ $tg\,\beta = \frac{21}{20}$ $cos\,\gamma = \frac{33}{65}$	$2p = \frac{441}{74}$ $area = \frac{243}{148}$
27	$a = 2$ $b = \frac{1}{2}$ $sin\,\gamma = \frac{15}{17}$	$2p = \frac{5}{2}\left(1 + \frac{3\sqrt{17}}{17}\right)$ $area = \frac{15}{34}$
28	$a = \frac{3}{5}$ $b = \frac{8}{5}$ $c = \frac{7}{5}$	$2p = \frac{18}{5}$ $area = \frac{6\sqrt{3}}{25}$
29	$a = \frac{1}{3}$ $b = \frac{2}{9}$ $cos\,\gamma = \frac{24}{25}$	$2p = \frac{5}{9} + \frac{\sqrt{37}}{45}$ $area = \frac{7}{675}$
30	$b = \frac{25}{48}$ $sin\,\gamma = \frac{253}{325}$ $tg\,\alpha = \frac{24}{7}$	$2p = \frac{1396}{829}$ $area = \frac{25}{192}$

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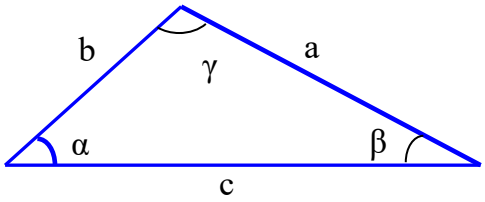
classificare i triangoli di lati a, b, c noti in acutangoli, rettangoli o ottusangoli



31	$a=\frac{6}{5} \quad b=2 \quad c=\frac{12}{7}$	*acutangolo*
32	$a=10 \quad b=\frac{7}{9} \quad c=\frac{48}{5}$	*ottusangolo in α*
33	$a=\frac{7}{3} \quad b=\frac{10}{7} \quad c=\frac{13}{7}$	*acutangolo*
34	$a=\frac{16}{3} \quad b=\frac{34}{3} \quad c=10$	*rettangolo in β*
35	$a=\frac{5}{7} \quad b=\frac{5}{3} \quad c=1$	*ottusangolo in β*
36	$a=\frac{9}{8} \quad b=\frac{10}{9} \quad c=\frac{1}{2}$	*acutangolo*
37	$a=\frac{41}{5} \quad b=8 \quad c=\frac{9}{5}$	*rettangolo in α*
38	$a=\frac{8}{7} \quad b=\frac{2}{3} \quad c=\frac{10}{7}$	*ottusangolo in γ*
39	$a=3 \quad b=\frac{9}{2} \quad c=\frac{31}{8}$	*acutangolo*
40	$a=\frac{7}{2} \quad b=\frac{6}{5} \quad c=\frac{37}{10}$	*rettangolo in γ*