

Risposte

1. a) $\frac{7}{90}\pi$ b) $\frac{25}{36}\pi$ c) $\frac{7}{10}\pi$ d) $\frac{7}{5}\pi$ e) $\frac{27}{10}\pi$
2. a) $\frac{41}{240}\pi$ b) $\frac{77}{72}\pi$ c) $\frac{631}{450}\pi$ d) $\frac{284}{225}\pi$ e) $\frac{251}{75}\pi$
3. a) $\frac{21}{64}\pi$ b) $\frac{241}{288}\pi$ c) $\frac{17417}{12000}\pi$ d) $\frac{4759}{2880}\pi$ e) $\frac{51}{32}\pi$
4. a) 28° b) 306° c) 130° d) 285° e) 125°
5. a) $31^\circ 12'$ b) $104^\circ 24'$ c) $112^\circ 30'$ d) $348^\circ 45'$ e) $517^\circ 30'$
6. a) $36^\circ 33' 45''$ b) $53^\circ 16' 48''$ c) $286^\circ 52' 30''$ d) $320^\circ 37' 30''$ e) $364^\circ 19' 12''$
14. a) $\sqrt{3}$ b) -4 15. a) 2 b) $-\frac{\sqrt{2}}{2}$ 16. a) 0 b) $\frac{1}{2\sqrt{3}}$
17. $a-b$ 18. $a-2$ 19. a) 0 b) b^2-1
20. a) 0 b) 0 21. a) -1 b) 1 22. a) $-4ab$ b) $2ab$
23. $a+b$ 38. a) $-1 \leq k \leq 1$ b) $-2 \leq k \leq 2$ c) $k \neq 0$ ($k \in \mathfrak{R}$)
39. a) $k \in]-\infty; -\frac{3}{2}] \cup [\frac{3}{2}; +\infty[$ b) $k \in]-\infty; -1] \cup [\frac{1}{5}; +\infty[$ c) $k \in \mathfrak{R} \setminus \{\frac{1}{3}\}$
40. a) $k \in \mathfrak{R}$ b) $k \in [-1; 1]$ c) $k \in [\frac{1}{2}; 1]$
41. a) $k \in]-\infty; -2] \cup [2; +\infty[$ b) $k \in]-\infty; \frac{13}{4}]$ c) $k \in \mathfrak{R} \setminus \{\pm 1\}$
42. a) $k \in [-2; -1] \cup [1; 2]$ b) $k \in [-1; 1]$ c) $k \in [-4; 2]$
43. a) $k \geq \frac{1}{2}$ b) $k \in \mathfrak{R}$ c) $k \in]-\infty; 5-2\sqrt{6}] \cup [5+2\sqrt{6}; +\infty[$
44. a) $k \in]-\infty; \frac{1}{2}] \cup [\frac{3}{4}; +\infty[$ b) $k \in]-\infty; -4] \cup [-2; +\infty[$ c) $k \in]-\infty; -1-\sqrt{3}] \cup [-1+\sqrt{3}; +\infty[$
45. a) $k=0$ b) $k \in [0; 3]$ c) $k \in [-2; 2]$
46. a) $\cos \alpha = \frac{2\sqrt{2}}{3}$, $\tan \alpha = \frac{\sqrt{2}}{4}$, $\cot \alpha = 2\sqrt{2}$ b) $\cos \alpha = \frac{4}{5}$, $\tan \alpha = -\frac{3}{4}$, $\cot \alpha = -\frac{4}{3}$
47. a) $\cos \alpha = -\frac{\sqrt{7}}{3}$, $\tan \alpha = -\frac{\sqrt{14}}{7}$, $\cot \alpha = -\frac{\sqrt{14}}{2}$ b) $\cos \alpha = -\frac{\sqrt{5}}{3}$, $\tan \alpha = \frac{2\sqrt{5}}{5}$, $\cot \alpha = \frac{\sqrt{5}}{2}$
48. a) $\sin \alpha = \frac{\sqrt{15}}{4}$, $\tan \alpha = \sqrt{15}$, $\cot \alpha = \frac{\sqrt{15}}{15}$ b) $\sin \alpha = \frac{\sqrt{3}}{2}$, $\tan \alpha = -\sqrt{3}$, $\cot \alpha = -\frac{\sqrt{3}}{3}$
49. a) $\sin \alpha = -\frac{1}{3}$, $\tan \alpha = -\frac{\sqrt{2}}{4}$, $\cot \alpha = -2\sqrt{2}$ b) $\sin \alpha = -\frac{2}{3}$, $\tan \alpha = \frac{2\sqrt{5}}{5}$, $\cot \alpha = \frac{\sqrt{5}}{2}$
50. a) $\sin \alpha = \frac{2\sqrt{5}}{5}$, $\cos \alpha = \frac{\sqrt{5}}{5}$, $\cot \alpha = \frac{1}{2}$ b) $\sin \alpha = -\frac{3}{5}$, $\cos \alpha = \frac{4}{5}$, $\cot \alpha = -\frac{4}{3}$
51. a) $\sin \alpha = -\frac{\sqrt{3}}{3}$, $\cos \alpha = -\frac{\sqrt{6}}{3}$, $\cot \alpha = \sqrt{2}$ b) $\sin \alpha = \frac{\sqrt{10}}{10}$, $\cos \alpha = -\frac{3\sqrt{10}}{10}$, $\cot \alpha = -3$
52. a) $\sin \alpha = \frac{1}{3}$, $\cos \alpha = \frac{2\sqrt{2}}{3}$, $\tan \alpha = \frac{\sqrt{2}}{4}$ b) $\sin \alpha = \frac{\sqrt{3}}{2}$, $\cos \alpha = -\frac{1}{2}$, $\tan \alpha = -\sqrt{3}$
53. a) $\sin \alpha = -\frac{2}{3}$, $\cos \alpha = \frac{-\sqrt{5}}{3}$, $\tan \alpha = \frac{2\sqrt{5}}{5}$ b) $\sin \alpha = -\frac{5\sqrt{29}}{29}$, $\cos \alpha = \frac{2\sqrt{29}}{29}$, $\tan \alpha = -\frac{5}{2}$

64. a) $-\frac{1}{\sin^2 \alpha}$ b) $\sin \alpha$
65. a) $\sin \alpha$ b) $\frac{1}{1 - \sin^2 \alpha}$
66. a) $\frac{1}{\sin \alpha}$ b) 2
67. a) $\frac{1}{\sin \alpha}$ b) $\sin^2 \alpha$
68. a) $\sin \alpha (\sin^2 \alpha - 1)$ b) $\sin^2 \alpha$
69. a) $\cos \alpha$ b) $\frac{1}{\cos \alpha}$
70. a) $2 - \cos^2 \alpha$ b) $\cos \alpha$
71. a) $2 - \cos^2 \alpha$ b) $\cos \alpha$
72. a) $2 \cos^2 \alpha$ b) $\frac{1}{\cos \alpha}$
73. a) $\frac{1}{\cos \alpha}$ b) $\cos \alpha (1 - \cos^2 \alpha)$
74. a) $\tan \alpha$ b) $\tan \alpha$
75. a) $\tan^2 \alpha$ b) $\tan^2 \alpha$
76. a) $\frac{1}{1 + \tan^2 \alpha}$ b) $\frac{1}{\tan \alpha}$
77. a) $\frac{1}{\tan \alpha}$ b) $\tan^4 \alpha$
78. a) 1 b) $\tan \alpha$
79. a) $\frac{2(1 + \cot^2 \alpha)}{1 - \cot^2 \alpha}$ b) $\frac{1}{\cot \alpha}$
80. a) $\frac{1}{\cot^2 \alpha}$ b) 2
81. a) $\cot^2 \alpha + 1$ b) $\frac{1}{\cot \alpha}$
82. a) $\cot \alpha$ b) 2
83. a) 0 b) $\cot \alpha$