

- 8.025.  $\sin(15^\circ + x) + \sin(45^\circ - x) = 1.$
- 8.027.  $\sin x \cdot \sin 3x + \sin 4x \cdot \sin 8x = 0.$
- 8.028.  $2 \operatorname{tg}^3 x - 2 \operatorname{tg}^2 x + 3 \operatorname{tg} x - 3 = 0.$
- 8.030.  $2 + \operatorname{tg} x \cdot \operatorname{ctg} \frac{x}{2} + \operatorname{ctg} x \cdot \operatorname{tg} \frac{x}{2} = 0.$
- 8.031.  $\sin 2x + \sin(\pi - 8x) = \sqrt{2} \cos 3x.$
- 8.032.  $\frac{1}{2}(\cos 5x + \cos 7x) - \cos^2 2x + \sin^2 3x = 0.$
- 8.033.  $2(\cos 4x - \sin x \cdot \cos 3x) = \sin 4x + \sin 2x.$
- 8.034.  $\sin x \cos x \cos 2x \cos 8x = \frac{1}{4} \sin 12x.$
- 8.035.  $3 \sin^2 2x + 7 \cos 2x - 3 = 0.$
- 8.036.  $\sin 2x \cdot \sin 6x - \cos 2x \cdot \cos 6x = \sqrt{2} \cdot \sin 3x \cdot \cos 8x.$
- 8.037.  $\sin 3x \cdot \cos 3x = \sin 2x.$
- 8.038.  $\cos 2x - 5 \sin x - 3 = 0.$
- 8.039.  $3 \sin 2x + 2 \cos 2x = 3.$
- 8.040.  $\operatorname{ctg}\left(\frac{3\pi}{2} - x\right) - \operatorname{ctg}^2 x + \frac{1 + \cos 2x}{\sin^2 x} = 0.$
- 8.041.  $\cos 9x - \cos 7x + \cos 3x - \cos x = 0.$
- 8.042.  $2\left(\operatorname{tg} \frac{t}{2} - 1\right) = \cos t.$
- 8.043.  $\sin 3z - \cos 3z = \sqrt{\frac{3}{2}}.$
- 8.044.  $\sqrt{3} \sin 2x + \cos 5x - \cos 9x = 0.$
- 8.045.  $2 \cos^2 x + 5 \sin x - 4 = 0.$
- 8.046.  $\sin \frac{z}{2} \cos \frac{3z}{2} - \frac{1}{\sqrt{3}} \sin 2z = \sin \frac{3z}{2} \cos \frac{z}{2}.$
- 8.047.  $8 \cos^4 x - 8 \cos^2 x - \cos x + 1 = 0.$
- 8.048.  $\sin\left(\frac{\pi}{4} + 5x\right) \cos\left(\frac{\pi}{4} + 2x\right) = \sin\left(\frac{\pi}{4} + x\right) \sin\left(\frac{\pi}{4} - 6x\right).$
- 8.049.  $\cos 3x = 2 \sin\left(\frac{3\pi}{2} + x\right).$
- 8.050.  $5(1 + \cos x) = 2 + \sin^4 x - \cos^4 x.$
- 8.051.  $1 + \sin 2x = (\cos 3x + \sin 3x)^2.$

- 8.052.  $\sin 3x = 2 \cos \left( \frac{\pi}{2} - x \right)$ .
- 8.053.  $\cos 4x + 2 \sin^2 x = 0$ .
- 8.054.  $\sin x + \sin 7x - \cos 5x + \cos (3x - 2\pi) = 0$ .
- 8.055.  $\cos^4 2x + 6 \cos^2 2x = \frac{25}{16}$ .
- 8.056.  $1 + \cos t + \cos 2t + \cos 3t = 0$ .
- 8.057.  $\cos 2x = \sqrt{2} (\cos x - \sin x)$ .
- 8.058.  $1 + \cos 7x = \left( \sin \frac{3x}{2} - \cos \frac{3x}{2} \right)^2$ .
- 8.059.  $2 \operatorname{tg}^4 3x - 3 \operatorname{tg}^2 3x + 1 = 0$ .
- 8.062.  $\cos^3 x + \cos^2 x - 4 \cos^2 \frac{x}{2} = 0$ .
- 8.063.  $\sin 9x = 2 \sin 3x$ .
- 8.065.  $\sin 2z + \cos 2z = \sqrt{2} \sin 3z$ .
- 8.066.  $6 \sin^2 x + 2 \sin^2 2x = 5$ .
- 8.067.  $\sin 3x + \sin 5x = 2 (\cos^2 2x - \sin^2 3x)$ .
- 8.069.  $2 \sin^3 x - \cos 2x - \sin x = 0$ .
- 8.070.  $3 \sin 5z - 2 \cos 5z = 3$ .
- 8.071.  $4 \sin 3z + \frac{1}{3} \cos 3z = 3$ .
- 8.072.  $(\cos 6x - 1) \operatorname{ctg} 3x = \sin 3x$ .
- 8.074.  $1 - \cos (\pi + x) - \sin \frac{3\pi + x}{9} = 0$ .
- 8.076.  $\sin x - \sin 2x + \sin 5x + \sin 8x = 0$ .
- 8.077.  $2 \sin z - \cos z = \frac{2}{5}$ .
- 8.078.  $\cos \left( \frac{\pi}{2} + 5x \right) + \sin x = 2 \cos 3x$ .

- 8.080.  $\cos x - \sqrt{3} \sin x = \cos 3x$ .
- 8.081.  $6 \sin^2 x + \sin x \cos x - \cos^2 x = 2$ .
- 8.082.  $\cos 7x + \sin 8x = \cos 3x - \sin 2x$ .
- 8.083.  $\sin^2 x - 2 \sin x \cos x = 3 \cos^2 x$ .
- 8.084.  $\cos 5x + \cos 7x = \cos (\pi + 6x)$ .
- 8.086.  $\cos 6x = 2 \sin \left( \frac{3\pi}{2} + 2x \right)$ .
- 8.087.  $2 \sin x \cos \left( \frac{3\pi}{2} + x \right) - 3 \sin (\pi - x) \cos x + \sin \left( \frac{\pi}{2} + x \right) \cos x = 0$ .
- 8.088.  $(\sin 4t + \cos 4t)^2 = 16 \sin 2t \cos^3 2t - 8 \sin 2t \cos 2t$ .
- 8.093.  $\cos t \cdot \sin \left( \frac{\pi}{2} + 6t \right) + \cos \left( \frac{\pi}{2} - t \right) \cdot \sin 6t = \cos 6t + \cos 4t$ .
- 8.096.  $\sin 3x + \sin 5x = \sin 4x$ .
- 8.097.  $\sin z - \sin^2 z = \cos^2 z - \cos z$ .
- 8.098.  $\sin z + \sin 2z + \sin 3z = \cos z + \cos 2z + \cos 3z$ .
- 8.100.  $1 - \cos 6x = \operatorname{tg} 3x$ .
- 8.101.  $\sqrt{2} \cos x + \cos 2x + \cos 4x = 0$ .
- 8.102.  $\sin^4 x + \cos^4 x = \sin 2x - 0,5$ .
- 8.103.  $2 \cos 2x + 2 \operatorname{tg}^2 x = 5$ .
- 8.104.  $\sin 2x \cdot \sin 6x = \cos x \cos 3x$ .
- 8.105.  $\sin^4 2x + \cos^4 2x = \sin 2x \cos 2x$ .
- 8.107.  $4 \sin x + \cos x = 4$ .
- 8.108.  $2 \sin^2 z + \operatorname{tg}^2 z = 2$ .
- 8.109.  $\cos 2x + \cos 6x + 2 \sin^2 x = 1$ .
- 8.110.  $\cos 3x \cos 6x = \cos 4x \cos 7x$ .
- 8.111.  $\sin 3x + \frac{\sqrt{3}}{2} \sin 5x + \frac{1}{2} \cos 5x = 0$ .
- 8.113.  $\cos^2 3x + \cos^2 4x + \cos^2 5x = \frac{5}{2}$ .
- 8.114.  $1 + \sin x - \cos 5x - \sin 7x = 2 \cos^2 \frac{3}{2} x$ .
- 8.115.  $\frac{\sin z}{1 + \cos z} = 2 - \operatorname{ctg} z$ .
- 8.116.  $\sin (15^\circ + x) + \cos (45^\circ + x) + \frac{1}{2} = 0$ .
- 8.117.  $\cos 2x = \frac{1 + \sqrt{3}}{2} (\cos x + \sin x)$ .
- 8.118.  $3(1 - \sin t) + \sin^4 t = 1 + \cos^4 t$ .

- 8.120.  $\cos^2 \frac{x}{2} + \cos^2 \frac{3}{2} x - \sin^2 2x - \sin^2 4x = 0.$
- 8.121.  $\frac{\sin^2 x - 2}{\sin^2 x - 4 \cos^2 \frac{x}{2}} = \operatorname{tg}^2 \frac{x}{2}.$
- 8.122.  $\cos^2 x + \cos^2 2x - \cos^2 3x - \cos^2 4x = 0.$
- 8.123.  $\sin 3x - 4 \sin x \cos 2x = 0.$
- 8.125.  $\sin \left( \frac{\pi}{2} + 3x \right) - \sin (\pi - 5x) = \sqrt{3} (\cos 5x - \sin 3x).$
- 8.126.  $\frac{1}{1 + \cos^2 z} + \frac{1}{1 + \sin^2 z} = \frac{16}{11}.$
- 8.128.  $\cos 4x \cdot \cos (\pi + 2x) - \sin 2x \cdot \cos \left( \frac{\pi}{2} - 4x \right) = \frac{\sqrt{2}}{2} \sin 4x.$
- 8.129.  $\sin x - \sin 3x - \sin 5x + \sin 7x = 0.$
- 8.130.  $\sin 3x - \sin 7x = \sqrt{3} \cdot \sin 2x.$
- 8.131.  $\sqrt{3} - \operatorname{tg} x = \operatorname{tg} \left( \frac{\pi}{3} - x \right).$
- 8.133.  $\sin^2 3x + \sin^2 4x = \sin^2 5x + \sin^2 6x.$
- 8.135.  $\sin^4 x + \cos^4 x = \cos^2 2x + 0,25.$
- 8.136.  $\sin 2z - 4 \cos 2z = 4.$
- 8.137.  $3 + 2 \sin 2x = \operatorname{tg} x + \operatorname{ctg} x.$
- 8.138.  $\sin^2 \left( \frac{\pi}{8} + t \right) = \sin t + \sin^2 \left( \frac{\pi}{8} - t \right).$
- 8.139.  $\sin^3 \frac{x}{3} - \sin^2 \frac{x}{3} \cos \frac{x}{3} - 3 \sin \frac{x}{3} \cos^2 \frac{x}{3} + 3 \cos^3 \frac{x}{3} = 0.$
- 8.140.  $\operatorname{tg} (x - 15^\circ) \cdot \operatorname{ctg} (x + 15^\circ) = \frac{1}{3}.$
- 8.141.  $\cos (x + 1) \cdot \sin 2(x + 1) = \cos 3(x + 1) \sin 4(x + 1).$
- 8.142.  $\cos (4x + 2) + 3 \sin (2x + 1) = 2.$
- 8.143.  $\cos 4x + 2 \cos^2 x = 1.$
- 8.144.  $\sin^4 x + \cos^4 x = \frac{5}{8}.$
- 8.145.  $\cos x - \cos 2x = \sin 3x.$
- 8.147.  $\cos x - \sin x = 4 \cos x \cdot \sin^2 x.$
- 8.148.  $\operatorname{tg} 2x \cdot \sin 2x - 3 \sqrt{3} \operatorname{ctg} 2x \cdot \cos 2x = 0.$
- 8.149.  $\cos x - \cos 3x = \sin 2x.$

$$8.150. \sqrt{2} (1 + \cos x) = \operatorname{ctg} \frac{x}{2}.$$

$$8.152. \sin^2 3x = 3 \cos^2 3x.$$

$$8.153. \sin 3x + \sin x = 4 \sin^3 x.$$

$$8.154. \sin 6x + \sin 2x = \frac{1}{2} \operatorname{tg} 2x.$$

$$8.155. \frac{2 \cos(\pi + x) - 5 \cos\left(\frac{3}{2}\pi - x\right)}{\cos\left(\frac{3}{2}\pi + x\right) - \cos(\pi - x)} = \frac{3}{2}.$$

$$8.156. (\sin 2x + \sqrt{3} \cos 2x)^2 = 2 - 2 \cos\left(\frac{2}{3}\pi - x\right).$$

$$8.157. \operatorname{ctg} x + \operatorname{tg} 2x + 1 = 4 \cos^2 x + \frac{\sin 3x}{\sin x} - 2 \cos 2x.$$

$$8.159. 2 \cos^2 \frac{x}{2} - 1 = \sin 3x.$$

$$8.160. \sin^2 2x + \sin^2 x = \frac{9}{16}.$$

$$8.161. 3 \cos^2 x = \sin^2 x + \sin 2x.$$

$$8.162. 2(1 - \cos 2x) = \sqrt{3} \operatorname{tg} x.$$

$$8.163. a \cos^2 \frac{x}{2} - (a + 2b) \sin^2 \frac{x}{2} = a \cos x - b \sin x.$$

$$8.164. \sin 5x = \cos 4x.$$

$$8.165. 2 \operatorname{tg} x - 2 \operatorname{ctg} x = 3.$$

$$8.166. 25 \sin^2 x + 100 \cos x = 89.$$

$$8.167. \cos 2x + \sin^2 x + \sin x = 0,25.$$

$$8.168. \frac{1}{1 - \operatorname{tg}^2 2x} = 1 + \cos 4x.$$

$$8.169. \sin x + \sin 3x = 4 \cos^3 x.$$

$$8.170. \cos 2x + 3 \sin x = 2.$$

$$8.171. \cos 2x = 1 - \sin 2x.$$

$$8.172. \operatorname{tg}(70^\circ + x) + \operatorname{tg}(20^\circ - x) = 2.$$

$$8.173. \sin x + \sin \frac{1}{\pi} = \sin\left(x + \frac{1}{\pi}\right).$$

$$8.174. \operatorname{tg}^2 3x - 2 \sin^2 3x = 0.$$

$$8.175. 6 \operatorname{ctg}^2 x - 2 \cos^2 x = 3.$$

8.025.  $x = 15^\circ + 360^\circ \cdot k$ . 8.026.  $x_1 = \frac{\pi}{4}(4k+1)$ ,  $x_2 = \frac{\pi}{8}(4k+1)$ . 8.027.  
 $x_1 = \frac{\pi k}{5}$ ,  $x_2 = \frac{\pi k}{7}$ . 8.028.  $x = \frac{\pi}{4}(4k+1)$ . 8.029.  $x_1 = \frac{\pi k}{2}$ ,  $x_2 = \frac{\pi}{14}(2k+1)$ . 8.030.  
 $x = \frac{\pi}{3}(6k \pm 2)$ . 8.031.  $x_1 = \frac{\pi}{6}(2k+1)$ ,  $x_2 = (-1)^k \frac{\pi}{20} + \frac{\pi k}{5}$ . 8.032.  $x_1 = \frac{\pi}{2}(2k+1)$ ,  
 $x_2 = \frac{2\pi k}{11}$ . 8.033.  $x = \frac{\pi}{16}(4k+1)$ . 8.034.  $x = \frac{\pi k}{8}$ . 8.035.  $x = \frac{\pi}{4}(2k+1)$ . 8.036.  $x_1 =$   
 $= \frac{\pi}{16}(2k+1)$ ,  $x_2 = (-1)^{k+1} \frac{\pi}{12} + \frac{\pi k}{3}$ . 8.037.  $x_1 = \frac{\pi k}{2}$ ,  $x_2 = \frac{\pi}{12}(6k \pm 1)$ . 8.038.  $x =$   
 $= (-1)^{k+1} \frac{\pi}{6} + \frac{\pi}{k}$ . 8.039.  $x_1 = \frac{\pi}{4}(4k+1)$ ,  $x_2 = \arctg 5 + \pi k$ . 8.040.  $x = \frac{\pi}{4}(4k+3)$ .  
 8.041.  $x_1 = \frac{\pi k}{5}$ ,  $x_2 = \frac{\pi}{6}(2k+1)$ . 8.042.  $t = \frac{\pi}{2}(4k+1)$ . 8.043.  $z_1 = 35^\circ + 120^\circ \cdot k$ ,  
 $z_2 = 55^\circ + 120^\circ \cdot k$ . 8.044.  $x_1 = \frac{\pi k}{2}$ ,  $x_2 = (-1)^{k+1} \frac{\pi}{21} + \frac{\pi k}{7}$ . 8.045.  $x = (-1)^k \frac{\pi}{6} + \pi k$ .  
 8.046.  $z_1 = \pi k$ ,  $z_2 = \pm \frac{5\pi}{6} + 2\pi k$ . 8.047.  $x_1 = \frac{2\pi k}{5}$ ,  $x_2 = \frac{2\pi k}{3}$ . 8.048.  $x = \frac{\pi k}{4}$ . 8.049.  
 $x_1 = \frac{\pi}{2}(2k+1)$ ,  $x_2 = \pm \frac{\pi}{3} + \pi k$ . 8.050.  $x = \pm \frac{2\pi}{3} + 2\pi k$ . 8.051.  $x_1 = \frac{\pi k}{2}$ ,  $x_2 =$   
 $= \frac{\pi}{8}(2k+1)$ . 8.052.  $x_1 = \pi k$ ,  $x_2 = \pm \frac{\pi}{6} + \pi k$ . 8.053.  $x_1 = \frac{\pi}{4}(2k+1)$ ,  $x_2 = \pm \frac{\pi}{6} + \pi k$ .  
 8.054.  $x_1 = \frac{\pi k}{4}$ ,  $x_2 = \frac{\pi}{8}(3+4k)$ . 8.055.  $x = \pm \frac{\pi}{6} + \frac{\pi k}{2}$ . 8.056.  $t_1 = \frac{\pi}{2}(2k+1)$

$t_2 = \frac{\pi}{3}(2k+1)$ . 8.057.  $x = \frac{\pi}{4} + \pi k$ . 8.058.  $x_1 = \frac{\pi}{8}(1+4k)$ ,  $x_2 = \frac{\pi}{20}(3+4k)$ . 8.059.  
 $x_1 = \pm \frac{\pi}{12} + \frac{\pi k}{3}$ ,  $x_2 = \pm \frac{1}{3} \arctg \frac{\sqrt{2}}{2} + \frac{\pi k}{3}$ . 8.060.  $x = \frac{\pi k}{5}$ . 8.061.  $x = \pm \frac{\pi}{12} + \frac{\pi k}{3}$ .  
8.062.  $x = \pi(2k+1)$ . 8.063.  $x_1 = \frac{\pi k}{3}$ ,  $x_2 = \pm \frac{\pi}{18} + \frac{\pi k}{3}$ . 8.064.  $z = (-1)^{k+1} \frac{\pi}{12} + \frac{\pi k}{2}$ .  
8.065.  $z_1 = \frac{\pi}{4}(8k+1)$ ,  $z_2 = \frac{\pi}{20}(8k+3)$ . 8.066.  $x = \frac{\pi}{4}(2k+1)$ . 8.067.  $x_1 = \frac{\pi}{2}(2k+1)$ ,  
 $x_2 = \frac{\pi}{18}(4k+1)$ . 8.068.  $x_1 = \frac{\pi}{2}(2k+1)$ ,  $x_2 = \frac{\pi}{4}(4k+1)$ . 8.069.  $x_1 = \frac{\pi}{4}(2k+1)$ ,  
 $x_2 = \frac{\pi}{2}(4k-1)$ . 8.070.  $z_1 = \frac{\pi}{10} + \frac{2\pi k}{5}$ ,  $z_2 = \frac{2}{5} \arctg 5 + \frac{2\pi k}{5}$ . 8.071.  $z_1 = \frac{2}{3} \arctg 2 +$   
 $+\frac{2\pi k}{3}$ ,  $z_2 = \frac{2}{3} \arctg \frac{2}{5} + \frac{2\pi k}{3}$ . 8.072.  $x = \pm \frac{2}{9} \pi + \frac{2}{3} \pi k$ . 8.073.  $x = \pm \frac{\pi}{6} + \pi k$ .  
8.074.  $x_1 = \pi(2k+1)$ ,  $x_2 = \pm \frac{4}{3} \pi + 4\pi k$ . 8.075.  $x_1 = \pi k$ ,  $x_2 = -\frac{\pi}{4} + \pi k$ . 8.076.  $x_1 =$   
 $= \frac{\pi k}{3}$ ,  $x_2 = \frac{\pi}{7}(2k+1)$ . 8.077.  $z_1 = 2 \arctg 3 + 2\pi k$ ,  $z_2 = -2 \arctg 7 + 2\pi k$ . 8.078.  
 $x_1 = \frac{\pi}{6}(2k+1)$ ,  $x_2 = \frac{\pi}{4}(4k-1)$ . 8.079.  $x = \frac{\pi}{4}(2k+1)$ . 8.080.  $x_1 = \pi k$ ,  $x_2 =$   
 $= (-1)^k \frac{\pi}{6} + \frac{\pi k}{2}$ . 8.081.  $x_1 = -\frac{\pi}{4} + \pi k$ ,  $x_2 = \arctg \frac{3}{4} + \pi k$ . 8.082.  $x_1 = \frac{\pi k}{5}$ ,  
 $x_2 = \frac{\pi}{2}(4k-1)$ ,  $x_3 = \frac{\pi}{10}(4k+1)$ . 8.083.  $x_1 = -\frac{\pi}{4} + \pi k$ ,  $x_2 = \arctg 3 + \pi k$ . 8.084.  
 $x_1 = \frac{\pi}{12}(2k+1)$ ,  $x_2 = \pm \frac{2}{3} \pi + 2\pi k$ . 8.085.  $x_1 = \frac{\pi}{4} + \pi k$ ,  $x_2 = \arctg \frac{1}{3} + \pi k$ . 8.086.  
 $x_1 = \frac{\pi}{4}(2k+1)$ ,  $x_2 = \pm \frac{\pi}{6} + \frac{\pi k}{2}$ . 8.087.  $x_1 = \frac{\pi}{4}(4k+1)$ ,  $x_2 = \arctg \frac{1}{2} + \pi k$ . 8.088.  
 $t = \frac{\pi}{16}(4k+1)$ . 8.089.  $t_1 = -31^\circ + 180^\circ \cdot k$ ,  $t_2 = 89^\circ + 180^\circ \cdot k$ . 8.090.  $t = \frac{\pi}{2}(1+4k)$ .  
8.091.  $t_1 = \frac{\pi}{4}(2k+1)$ ,  $t_2 = \pi k$ . 8.092.  $x_1 = 100^\circ + 360^\circ \cdot k$ ,  $x_2 = -20^\circ + 360^\circ \cdot k$ .  
8.093.  $t_1 = \frac{\pi}{10}(2k+1)$ ,  $t_2 = \pm \frac{\pi}{3} + 2\pi k$ . 8.094.  $x = \pi(4k+1)$ . 8.095.  $x = \frac{\pi k}{6}$ .  
8.096.  $x_1 = \frac{\pi k}{4}$ ,  $x_2 = \frac{\pi}{3}(6k \pm 1)$ . 8.097.  $z_1 = 2\pi k$ ,  $z_2 = \frac{\pi}{2}(4k+1)$ . 8.098.  $z_1 =$   
 $= \frac{\pi}{8}(4k+1)$ ,  $z_2 = \frac{2\pi}{3}(3k \pm 1)$ . 8.099.  $x = \frac{\pi}{16}(4k+1)$ . 8.100.  $x_1 = \frac{\pi k}{3}$ ,  $x_2 = \frac{\pi}{12} \times$   
 $\times (4k+1)$ . 8.101.  $x_1 = \frac{\pi}{2}(2k+1)$ ,  $x_2 = \frac{\pi}{12}(8k \pm 3)$ . 8.102.  $x = \frac{\pi}{4}(4k+1)$ .  
8.103.  $x = \frac{\pi}{3}(3k \pm 1)$ . 8.104.  $x_1 = \frac{\pi}{10}(2k+1)$ ,  $x_2 = \frac{\pi}{6}(2k+1)$ . 8.105.  $x = \frac{\pi}{8}(4k+1)$ .  
8.106.  $x = \pm 40^\circ + 120^\circ \cdot k$ . 8.107.  $x_1 = \frac{\pi}{2}(4k+1)$ ,  $x_2 = 2 \arctg \frac{3}{5} + 2\pi k$ . 8.108.  $z =$   
 $= \frac{\pi}{4}(2k+1)$ . 8.109.  $x = \frac{\pi}{12}(2k+1)$ . 8.110.  $x = \frac{\pi k}{10}$ . 8.111.  $x_1 = 75^\circ + 180^\circ \cdot k$ ,  $x_2 =$   
 $= 45^\circ \cdot k - 3^\circ 45'$ . 8.112.  $x_1 = \frac{3\pi}{4} + \pi k$ ,  $x_2 = \pm \frac{\pi}{6} + \pi k$ . 8.113.  $x_1 =$   
 $= \frac{\pi}{16}(2k+1)$ ,  $x_2 = \frac{\pi}{3}(3k \pm 1)$ . 8.114.  $x_1 = \frac{\pi}{8}(2k+1)$ ,  $x_2 = \frac{\pi}{4}(4k-1)$ . 8.115.  $z =$   
 $= (-1)^k \cdot \frac{\pi}{6} + \pi k$ . 8.116.  $x_1 = 135^\circ + 360^\circ \cdot k$ ,  $x_2 = -105^\circ + 360^\circ \cdot k$ . 8.117.  $x_1 =$   
 $= \frac{\pi}{4}(4k-1)$ ,  $x_2 = \frac{\pi}{6}(12k-1)$ ,  $x_3 = \frac{\pi}{3}(6k-1)$ . 8.118.  $t_1 = (-1)^k \frac{\pi}{6} + \pi k$ ,  $t_2 =$

$$\begin{aligned}
&= \frac{\pi}{2} (4k+1); \quad 8.119. \quad x = \frac{\pi}{4} (4k-1). \quad 8.120. \quad x_1 = \frac{\pi}{4} (2k+1), \quad x_2 = \frac{\pi}{5} (2k+1), \quad x_3 = \\
&= \frac{\pi}{7} (2k+1). \quad 8.121. \quad x = \frac{\pi}{2} (2k+1). \quad 8.122. \quad x_1 = \frac{\pi k}{2}, \quad x_2 = \frac{\pi k}{5}. \quad 8.123. \quad x_1 = \pi k, \\
&x_2 = \frac{\pi}{6} (6k \pm 1). \quad 8.124. \quad x_1 = (-1)^k \frac{\pi}{12} + \frac{\pi k}{2}, \quad x_2 = \frac{\pi}{4} (4k-1). \quad 8.125. \quad x_1 = \frac{\pi}{16} (4k+1), \\
&x_2 = \frac{\pi}{12} (12k-1). \quad 8.126. \quad z = \frac{\pi}{12} (6k \pm 1). \quad 8.127. \quad x = \frac{\pi}{12} (1+6k). \quad 8.128. \quad x_1 = \frac{\pi}{4} \times \\
&\times (2k+1), \quad x_2 = (-1)^{k+1} \cdot \frac{\pi}{8} + \frac{\pi k}{2}. \quad 8.129. \quad x = \frac{\pi k}{4}. \quad 8.130. \quad x_1 = \frac{\pi k}{2}, \quad x_2 = \pm \frac{\pi}{6} + \\
&+ \frac{2}{5} \pi k. \quad 8.131. \quad x_1 = \pi k, \quad x_2 = \frac{\pi}{3} (3k+1). \quad 8.132. \quad x = \frac{\pi}{3} (3k \pm 1). \quad 8.133. \quad x_1 = \frac{\pi k}{2}, \\
&x_2 = \frac{\pi k}{9}. \quad 8.134. \quad t = \frac{\pi}{8} (2k+1). \quad 8.135. \quad x = \frac{\pi}{8} (2k+1). \quad 8.136. \quad z_1 = \frac{\pi}{2} (2k+1), \\
&z_2 = \operatorname{arctg} 4 + \pi k. \quad 8.137. \quad x = (-1)^k \cdot \frac{\pi}{12} + \frac{\pi k}{2}. \quad 8.138. \quad t_1 = \pi k, \quad t_2 = \frac{\pi}{4} (8k \pm 1). \\
&8.139. \quad x_1 = \frac{3\pi}{4} (4k+1), \quad x_2 = \pi (3k \pm 1). \quad 8.140. \quad x = 45^\circ (4k+1). \quad 8.141. \quad x_1 = \frac{\pi k}{3} - 1, \\
&x_2 = \frac{\pi}{8} (2k+1) - 1. \quad 8.142. \quad x_1 = \frac{\pi}{4} (4k+1) - \frac{1}{2}, \quad x_2 = (-1)^k \cdot \frac{\pi}{12} + \frac{\pi k}{2} - \frac{1}{2}. \\
&8.143. \quad x = \frac{\pi}{6} (2k+1). \quad 8.144. \quad x = \frac{\pi}{6} (3k \pm 1). \quad 8.145. \quad x_1 = \frac{2\pi k}{3}, \\
&x_2 = \frac{\pi}{2} (4k-1), \quad x_3 = \frac{\pi}{4} (4k+1). \quad 8.146. \quad x = 60^\circ + 180^\circ \cdot k. \quad 8.147. \quad x_1 = \frac{\pi}{4} (4k-1), \\
&x_2 = \frac{\pi}{8} (4k+1). \quad 8.148. \quad x = \frac{\pi}{6} (3k+1). \quad 8.149. \quad x_1 = \frac{\pi k}{2}, \quad x_2 = (-1)^k \cdot \frac{\pi}{6} + \pi k. \quad 8.150. \\
&x_1 = \pi (2k+1), \quad x_2 = (-1)^k \cdot \frac{\pi}{4} + \pi k. \quad 8.151. \quad x_1 = \frac{2\pi k}{3}, \quad x_2 = \frac{\pi}{6} (4k+1). \quad 8.152. \quad x = \\
&= \frac{\pi}{9} (3k \pm 1). \quad 8.153. \quad x_1 = \pi k, \quad x_2 = \frac{\pi}{4} (2k+1). \quad 8.154. \quad x_1 = \frac{\pi k}{2}, \quad x_2 = \frac{\pi}{6} (6k \pm 1). \\
&8.155. \quad x = \frac{\pi}{4} (4k+1). \quad 8.156. \quad x_1 = \frac{2}{5} \pi k, \quad x_2 = \frac{2\pi}{9} (3k-2). \quad 8.157. \quad x_1 = \frac{\pi}{2} (2k+1), \\
&x_2 = \frac{\pi}{8} (4k+1). \quad 8.158. \quad x = 30^\circ + 180^\circ \cdot k. \quad 8.159. \quad x_1 = \frac{\pi}{8} (4k+1), \quad x_2 = \frac{\pi}{4} (4k+1). \\
&8.160. \quad x = \pm \frac{1}{2} \arccos \frac{3}{4} + \pi k. \quad 8.161. \quad x_1 = \pi k - \operatorname{arctg} 3, \quad x_2 = \frac{\pi}{4} (4k+1). \quad 8.162. \\
&x_1 = \pi k, \quad x_2 = (-1)^k \cdot \frac{\pi}{6} + \frac{\pi k}{2}. \quad 8.163. \quad x_1 = 2\pi k, \quad x_2 = \frac{\pi}{2} (4k+1). \quad 8.164. \quad x_1 = \frac{\pi}{2} \times \\
&\times (2k+1), \quad x_2 = \frac{\pi}{18} (4k+1). \quad 8.165. \quad x = \frac{\pi k}{2} + \frac{1}{2} \operatorname{arctg} \left( -\frac{3}{4} \right). \quad 8.166. \quad x = \pm \arccos 0,8 + \\
&+ 2\pi k. \quad 8.167. \quad x = (-1)^{k+1} \cdot \frac{\pi}{6} + \pi k. \quad 8.168. \quad x = \frac{\pi}{12} (6k \pm 1). \quad 8.169. \quad x_1 = \frac{\pi}{2} (2k+1), \\
&x_2 = \frac{\pi}{4} (4k+1). \quad 8.170. \quad x_1 = (-1)^k \cdot \frac{\pi}{6} + \pi k, \quad x_2 = \frac{\pi}{2} (4k+1). \quad 8.171. \quad x_1 = \pi k, \quad x_2 = \\
&= \frac{\pi}{4} (4k+1). \quad 8.172. \quad x = 180^\circ \cdot k - 25^\circ. \quad 8.173. \quad x_1 = 2\pi k, \quad x_2 = 2\pi k - \frac{1}{\pi}. \quad 8.174. \quad x_1 = \\
&= \frac{\pi k}{3}, \quad x_2 = \frac{\pi}{12} (2k+1). \quad 8.175. \quad x = \pm \frac{1}{2} \arccos \frac{\sqrt{73}-9}{2} + \pi k. \quad 8.176. \quad x = \frac{\pi}{4} (8k+1).
\end{aligned}$$