

$$\sin^8 x + \cos^8 x = \frac{17}{16} \cos^2 2x$$

$$\frac{(1 - \cos 2x)^4}{16} + \frac{(1 + \cos 2x)^4}{16} = \frac{17}{16} \cos^2 2x$$

$$(1 - t)^4 + (1 + t)^4 = 17 t^2$$

$$(1 - t)^4 + (1 + t)^4 = 17 t^2$$

$$1 - 4t + 6t^2 - 4t^3 + t^4 + 1 + 4t + 6t^2 + 4t^3 + t^4 - 17t^2 = 0$$

$$2t^4 - 5t^2 + 2 = 0$$

$$f = t^2$$

$$2f^2 - 5f + 2 = 0$$

$$D = 25 - 16 = 9$$

$$f = 2; 0.5$$

$$t = \pm\sqrt{2}; \pm\sqrt{0.5}$$

$$\cos 2x = \sqrt{0.5}$$

$$\cos 2x = -\sqrt{0.5}$$

$$2x = \frac{\pi}{4} + \frac{1}{2}k\pi$$

$$x = \frac{\pi}{8} + \frac{k\pi}{4}$$

Ответ $\{\frac{\pi}{8} + \frac{k\pi}{4}\}$

