

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

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

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

$$\cos 2x = t$$

$$\left(\frac{1-t}{2}\right)^4 + \left(\frac{1+t}{2}\right)^4 = \frac{17}{16} t^2$$

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

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

$$2 + 12t^2 + 2t^4 = 17t^2$$

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

$$t^2 = x$$

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

$$D = 25 - 16 = 9$$

$$x_1 = \frac{5-3}{4} = \frac{1}{2}$$

$$x_2 = \frac{5+3}{4} = 2$$

$$t = \pm \sqrt{\frac{1}{2}}$$

$$\cos 2x = \pm \sqrt{\frac{1}{2}} = \pm \frac{\sqrt{2}}{2}$$

$$2x = \pm \frac{p}{4} + 2pk$$

$$x = \pm \frac{p}{8} + pk$$

$$2x = \pm \frac{3p}{4} + 2pk$$

$$x = \pm \frac{3p}{8} + pk$$

$$\cos^2 2x = \frac{1}{2}$$

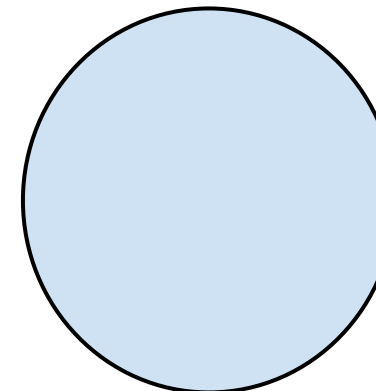
$$\frac{1 + \cos 4x}{2} = \frac{1}{2}$$

$$\cos 4x = 0$$

$$4x = \frac{p}{2} + pk$$

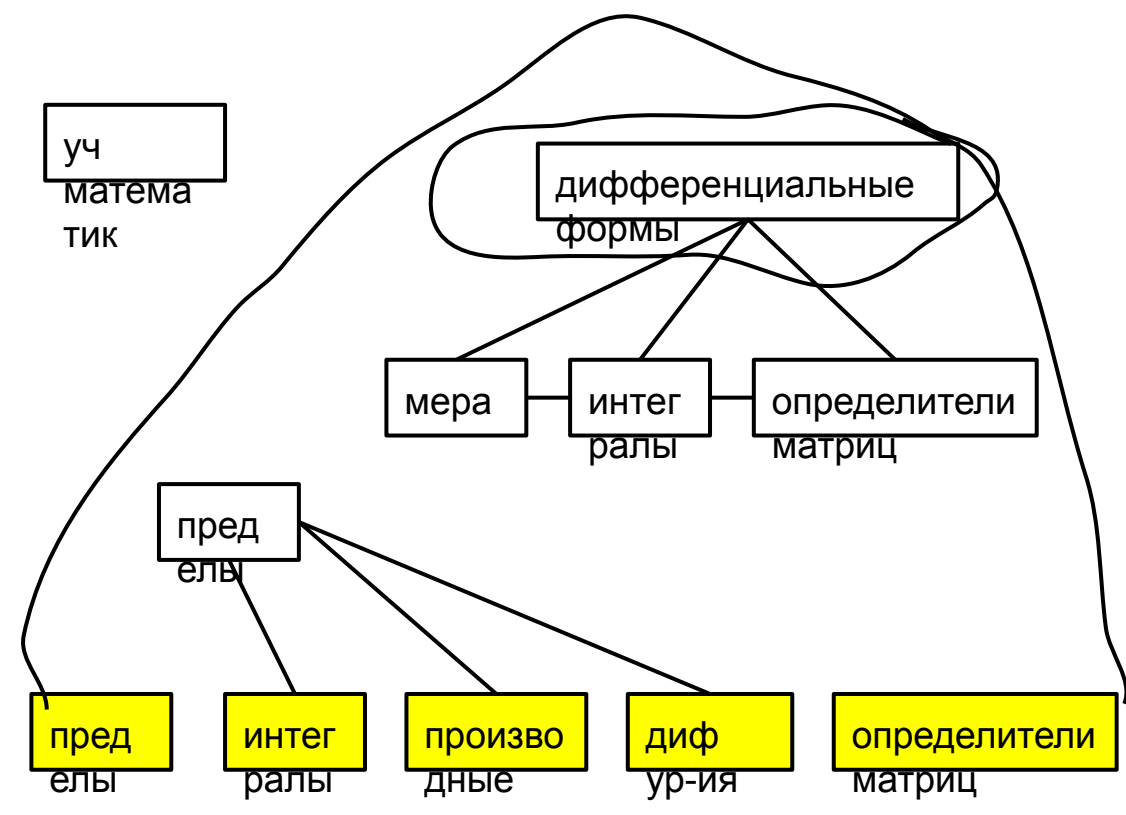
$$x = \frac{p}{8} + \frac{pk}{4}$$

Ответ: $\frac{p}{8} + \frac{pk}{4}$



теория графов
комбинаторика
программирование

1 1
 1 2 1
 1 3 3 1
 1 4 6 4 1



ср
 математик
 инженер