

Решить задачу на вынужденные колебания с резонансом $u_{tt} = a^2 u_{xx} + f(x, t)$:

1. $a = 1, f(x, t) = \sin 9(x - t), u(0, t) = u(\pi, t) = 0.$
2. $a = 1, f(x, t) = \cos 8(x - t), u_x(0, t) = u_x(\pi, t) = 0.$
3. $a = 2, f(x, t) = \sin 7(x - 2t), u(0, t) = u(\pi, t) = 0.$
4. $a = 2, f(x, t) = \cos 6(x - 2t), u_x(0, t) = u_x(\pi, t) = 0.$
5. $a = 3, f(x, t) = \sin 5(x - 3t), u(0, t) = u(\pi, t) = 0.$
6. $a = 3, f(x, t) = \cos 4(x - 3t), u_x(0, t) = u_x(\pi, t) = 0.$
7. $a = 1/2, f(x, t) = \sin(2x - t), u(0, t) = u(\pi, t) = 0.$
8. $a = 1/2, f(x, t) = \cos(2x - t), u_x(0, t) = u_x(\pi, t) = 0.$
9. $a = 1/3, f(x, t) = \sin(3x - t), u(0, t) = u(\pi, t) = 0.$
10. $a = 1/3, f(x, t) = \cos(3x - t), u_x(0, t) = u_x(\pi, t) = 0.$
11. $a = 1, f(x, t) = \sin 9(x + t), u_x(0, t) = u_x(\pi, t) = 0.$
12. $a = 1, f(x, t) = \cos 8(x + t), u(0, t) = u(\pi, t) = 0.$
13. $a = 2, f(x, t) = \sin 7(x + 2t), u_x(0, t) = u_x(\pi, t) = 0.$
14. $a = 2, f(x, t) = \cos 6(x + 2t), u(0, t) = u(\pi, t) = 0.$
15. $a = 3, f(x, t) = \sin 5(x + 3t), u_x(0, t) = u_x(\pi, t) = 0.$
16. $a = 3, f(x, t) = \cos 4(x + 3t), u(0, t) = u(\pi, t) = 0.$
17. $a = 1/2, f(x, t) = \sin(2x + t), u_x(0, t) = u_x(\pi, t) = 0.$
18. $a = 1/2, f(x, t) = \cos(2x + t), u(0, t) = u(\pi, t) = 0.$
19. $a = 1/3, f(x, t) = \sin(3x + t), u_x(0, t) = u_x(\pi, t) = 0.$
20. $a = 1/3, f(x, t) = \cos(3x + t), u(0, t) = u(\pi, t) = 0.$