

1.

$$f(x) = 0, g(x) = 0, \alpha(t) = \sin(t), \beta(t) = 0.$$

2.

$$f(x) = 0, g(x) = 0, \alpha(t) = \sin(t), \beta(t) = \sin(t).$$

3.

$$f(x) = \sin\left(\frac{\pi x}{L}\right), g(x) = 0, \alpha(t) = 0, \beta(t) = 0.$$

4.

$$f(x) = 15 \sin\left(\frac{\pi x}{L}\right), g(x) = 0, \alpha(t) = t, \beta(t) = 0.$$

5.

$$f(x) = 0, g(x) = 1, \alpha(t) = \sin(t), \beta(t) = t.$$

6.

$$f(x) = 2x, g(x) = 0, \alpha(t) = \sin(t), \beta(t) = 40 \cos(t).$$

7.

$$f(x) = 2, g(x) = 2, \alpha(t) = 2 \sin(t) + 2, \beta(t) = 2 \sin(t) + 2.$$

8.

$$f(x) = 1, g(x) = 0, \alpha(t) = \cos(t), \beta(t) = \cos(t).$$

9.

$$f(x) = 0, g(x) = \sin\left(\frac{2\pi x}{L}\right), \alpha(t) = 0, \beta(t) = 0.$$

10.

$$f(x) = 0, g(x) = \sin\left(\frac{8\pi x}{L}\right), \alpha(t) = 0, \beta(t) = 0.$$

11.

$$f(x) = 0, g(t, x) = 0, \alpha(t) = \sin(t), \beta(t) = 0.$$

12.

$$f(x) = 0, g(t, x) = 0, \alpha(t) = \sin(t), \beta(t) = \sin(t).$$

13.

$$f(x) = \frac{1}{4} \sin\left(\frac{\pi x}{L}\right), g(t, x) = 0, \alpha(t) = 0, \beta(t) = 0.$$

14.

$$f(x) = \sin\left(\frac{\pi x}{L}\right), g(t, x) = 0, \alpha(t) = 0, \beta(t) = \sin(t).$$

15.

$$f(x) = \sin\left(\frac{\pi x}{L}\right), g(t, x) = \sin(t), \alpha(t) = 0, \beta(t) = 0.$$

16.

$$f(x) = \sin\left(\frac{\pi x}{L}\right), g(t, x) = \sin(5x), \alpha(t) = 0, \beta(t) = 0.$$

17.

$$f(x) = 0, g(t, x) = e^{-x} \sin(t), \alpha(t) = 0, \beta(t) = 0.$$

18.

$$f(x) = 1, g(t, x) = 0, \alpha(t) = \cos(t), \beta(t) = 1.$$

19.

$$f(x) = 1, g(t, x) = 0, \alpha(t) = \cos(t), \beta(t) = 1 + t.$$

20.

$$f(x) = 1, g(t, x) = 0, \alpha(t) = \cos(t), \beta(t) = 1 + t \sin(5t).$$