A1Q8

If $\int_a^b f(x)\cdot g(x)\ \mathrm{dx} = 0$ we say $f(x)$ and $g(x)$ are orthogonal on $[a, b]$. Show that $\sin(n\cdot x)$ and $\cos(m\cdot x)$ are orthogonal on $[-\pi, \pi]$ for all $1 \le n \le 5, 1 \le m \le 5$. Use a double for loop. To force Maple to print something use the **print(...)** command.

```
> restart:
> for n to 5 do
      for m to 5 do
          print(int(sin(n*x)*cos(m*x),x=-Pi..Pi));
      od;
  od;
```

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