

C++11 code 11.3.3: Sub-problem (11-3.c): function `sineGodFlux()` → [GitLab](#)

```
2 constexpr double PI = 3.14159265358979323846;
3
4 double f(double x) { return std::sin(PI * x); }
5
6 double sineGodFlux(double v, double w) {
7     double result;
8     // Rankine-Hugoniot speed. No safeguards against cancellation are
9     taken. For v
10    // close to w the result will severely be affected by amplified
11    round-off
12    // error. However, this does not do any harm, because we are
13    interested in the
14    // the sign alone.
15    double s = (v != w) ? (f(w) - f(v)) / (w - v) : PI * std::cos(PI * v);
16    // Treat all different cases separately
17    if (((v < w) && (s > 0.0)) || ((v >= w) && (std::cos(PI * v) > 0.0))) {
18        result = f(v);
19    } else if (((v < w) && (s < 0.0)) || ((v >= w) && (std::cos(PI * w) < 0.0))) {
20        result = f(w);
21    } else
22        result = f(0.5);
23
24    return result;
25 }
```