

```
FUNCTION PythagDiff (a : REAL; b : REAL) : REAL;
VAR p, q, r, s : REAL;
CONST dp = 0.005; {desired precision as a REAL}
BEGIN
  IF (ABS(a) > ABS(b))
  THEN BEGIN p := ABS(a); q := ABS(b) END
  ELSE BEGIN p := ABS(b); q := ABS(a) END;
  WHILE (q > dp) DO
  BEGIN
    r := -(q/p) * (q/p);
    s := r / (4.0 + r);
    p := p + (s * p) + (s * p);
    q := s * q;
  END;
  PythagDiff := p;
END;
```