$$f(x) = \mathrm{x}(\sqrt{x+1} - \sqrt{x}) \qquad f2(x) = \frac{x}{\mathrm{x}(\sqrt{x+1} + \sqrt{x})}$$

$$g(x) = \frac{1 - \cos x}{x^2} \qquad g2(x) = \frac{2(\sin\frac{x}{2})^2}{\mathrm{x}}$$

A) In both original functions the greatest loss of significant figures is due to a subtraction operation between two values that are close to the same value.
B) In the first expression I removed the subtraction operation by applying the fuctions conjugate, in the second I used the trig identity for 1- cos x /2 = sin squared of x /2.