Risk Aversion Class Problem

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Individual #1 has the following utility function: $U(W) = \sqrt{W}$. Her initial wealth is \$10 and she is offered a coin toss which pays off \$6 if the coin comes up heads and -\$6 if the coin comes up tails.

A. Compute the *exact* value of the certainty equivalent and of the risk premium for #1.

B. Apply the Arrow-Pratt absolute risk aversion formula to obtain an *approximation* of the risk premium for #1.

C. Show that #1's absolute risk aversion is decreasing in wealth.

D. Suppose that individual #2 is offered this gamble. Individual #2 is identical in all respects to individual #1, except #2's utility $U(W) = W^{.25}$. Compute the *exact* value of the certainty equivalent and of the risk premium for #2, and also apply the Arrow-Pratt absolute risk aversion formula to obtain an *approximation* of the risk premium for this individual.

E. Who is more risk averse, #1 or #2? Explain why.