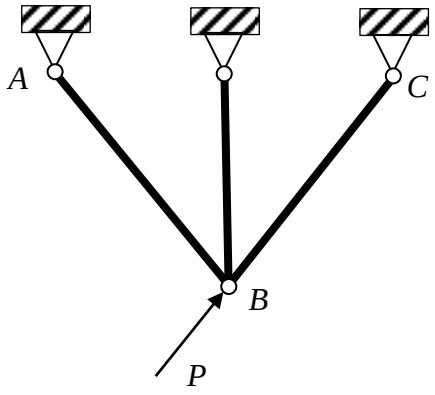
3. The probability that link *BC* passes the yielding test is 0.98, the probability that the link passes the buckling test is 0.99, and the probability that it passes both tests is 0.975. What is the probability that *BC* passes at least one of the tests?



Solution

A = passing yielding test, $P(A) = 0.98$

B = passing buckling test, $P(B) = 0.99$

C = passing at least one test
= passing yielding or buckling test

$C = A \cup B$ = A or B

$$P(C) = P(A \cup B) = P(A) + P(B) - P(AB)$$
$$= 0.98 + 0.99 - 0.975 = 0.995$$