

**Q)Create a knowledgebase using propositional logic and show that the given query entails the knowledge base or not**

```
def evaluate_expression(q, p, r):
    expression_result = ((not q) or (not p) or r) and ((not q) and p) and q
    return expression_result

def generate_truth_table():
    print("\tExpression (KB)")
    print("--|--|-----|-----")

    for q in [True, False]:
        for p in [True, False]:
            for r in [True, False]:
                expression_result = evaluate_expression(q, p, r)
                query_result = r

                print(f"{expression_result}| {query_result}")

def query_entails_knowledge():
    for q in [True, False]:
        for p in [True, False]:
            for r in [True, False]:
                expression_result = evaluate_expression(q, p, r)
                query_result = r

                if expression_result and not query_result:
                    return False

    return True

def main():
    generate_truth_table()
    if query_entails_knowledge():
        print("\nQuery entails the knowledge.")
    else:
        print("\nQuery does not entail the knowledge.")

if __name__ == "__main__":
    main()
```

OUTPUT:

```
Expression (KB)
---|---|---|-----|-----
False| True
False| False
False| True
False| False
False| True
False| False
False| True
False| False

Query entails the knowledge.
```