Assignment 3

Question 1

Given

$$S_1 = \{10, 15, 20, 25, 30\}$$
$$S_2 = \{15, 25, 35, 45, 55\}$$
$$S_3 = \{30, 35\}$$

$$S_4 = \left(\bigcup_{i=1}^{2} S_i \right) \cap S_3$$

(A) What are the elements in the set S_4?
(B) What is the cardinality of the set S_4?

Question 2

Given

$$p = T, q = F, r = T$$

Evaluate the expression

$$\neg(p \vee (q \wedge \neg r))$$

Question 3

Given

> $(\forall x \in S_1)p(x)$
> where
> $p(x)$ is "$x \equiv 0 \pmod 5$"

Note:
See S_1 in Question 1.

Write the truth set T_p for $p(x)$