Chapter 1
Real Numbers

Assessment based on Exercise 1.1 Question 2

Question 1:

Prove that one of every three consective postive integers is divisible by 3.

Solution:

Question 2:

Show that $n^2 - 1$ is divisible by 8, if n is an odd positive integer.

Solution:

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Question 3:

Prove that $n^2 - n$ is divisible by 2 for every positive integer n.

Solution:

Question 4:

Prove that if a a and b are odd positive integers, then $a^2 + b^2$ is even but not divisible by 4.

Solution:

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Question 5:

Show that one and only one out of n, n + 2 or n + 4 is divisible by 3, where some integer q.

Solution:

Question 6:

Show that the square of any positive integer cannot be of the from 5q + 2 or 5q + 3 for any integer q.

Solution: