11. Show that $\log_2 3$ is an irrational number. Recall that an irrational number is a real number x that cannot be written as the ratio of two integers.

13. Prove or disprove that there are three consecutive odd positive integers that are primes, that is, odd primes of the form p, $p + 2$, and $p + 4$.

15. Which positive integers less than 30 are relatively prime to 30?

17. Determine whether the integers in each of these sets are pairwise relatively prime.

a) 11, 15, 19 **b)** 14, 15, 21

c) 12, 17, 31, 37 **d)** 7, 8, 9, 11

49. Prove that the product of any three consecutive integers is divisible by 6.