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GRADE 10 - WORKSHEET 1

1. "The product of two consecutive positive integers is divisible by 2". Is this statement true or false? Justify your answer.
2. "The product of three consecutive positive integers is divisible by 6". Is this statement true or false? Justify your answer.
3. Prove that $\sqrt{p} + \sqrt{q}$ is irrational, where p, q are primes.
4. Two alarm clocks ring their alarms at regular intervals of 50 sec and 48 sec. If they first beep together at 12 noon.at what time will beep again for the first time?
5. Show the reciprocal of $3 + 2\sqrt{2}$ is an irrational number.
6. Show that $(\sqrt{3} + \sqrt{5})^2$ is an irrational number.
7. Prove that $\left(\sqrt{2} + \frac{1}{\sqrt{2}}\right)^2$ is rational.
8. If h is the HCF of 56 and 72, find x and y satisfying $h = 56x + 72y$.
9. Show that only one of the numbers $n, n + 2$ and $n + 4$ is divisible by 3.
10. Prove that $n^2 - n$ is divisible by 2 for any positive integer *n*.
11. Find the LCM and HCF of 336 and 54 and verify that $HCF \times LCM = product\ of\ two\ numbers$.
12. Prove that $\sqrt{5}$ is an irrational number.