Worksheet: Number Systems

IGCSE · Class 9 · Mathematics · 20 questions · 48 marks

Name: _____ Date: _____ Score: _____ / 48

Q1. Is 169 rational or irrational? *[1 mark]*

Q2. Is 0.101001000100001… rational or irrational? *[1 mark]*

Q3. Will 7/250 give a terminating or non-terminating decimal? *[1 mark]*

Q4. Will 11/30 give a terminating or non-terminating decimal? *[1 mark]*

Q5. Simplify 48 27 + 12. *[1 mark]*

Q6. Find (125)^(2/3). *[1 mark]*

Q7. Simplify (16)^(3/4). *[1 mark]*

Q8. Insert two rational numbers between 3/5 and 4/5. *[2 marks]*

Q9. Express 0.6 as a fraction. *[3 marks]*

Q10. Express 1.32 as a fraction (the 32 repeats). *[3 marks]*

Q11. Rationalise 1/(5 2). *[2 marks]*

Q12. Rationalise 3/(3 + 2) and write in simplest form. *[3 marks]*

Q13. Find the value of (3 + 2)(3 2). *[2 marks]*

Q14. Expand $(5 + 3)^2$. *[3 marks]*

Q15. Locate 3 on the number line. *[3 marks]*

Q16. If a = 2 + 3 and b = 2 3, find a² + b² and a·b. *[4 marks]*

Q17. If x = 3 + 22, find x + 1/x. *[4 marks]*

Q18. If 2^x = 3^y = 6^z, prove that 1/x + 1/y = 1/z. *[4 marks]*

Q19. Prove that 2 + 3 is irrational. *[4 marks]*

Q20. Find an irrational number between 2 and 3. *[4 marks]*