[redacted]

1, then there is an integer k such that $x \quad y + 2z = 11k$.

or simplifying to get $\frac{1}{V_A} + \frac{1}{V_B} = \frac{1}{4}$. This expression is symmetric, so if we switch the starting time condition between Anna and Boris, then Anna would cover 2km less and Boris 2km more; $d = 2$.

4. Let x be the four digit number we are trying to nd. Then $x^2 \quad x = x(x \quad 1)$ is a number ending in 0000. That is, $x(x \quad 1)$ is divisible by $10\,000 = 2^4 5^4$. Now x and $x \quad 1$ are coprime, which is to say that they have no prime factors in common. Thus one of $x \quad 1$ or x is divisible by 2^4 and the *other* by 5^4. If x or $x \quad 1$ is divisible by 5^4,