Presentations03

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| Generic presentation: Select a problem from your textbook in the section currently discussed and solve it.  Get my okay and confirmation as a presentation topic. |  |
| State and solve a Diophantine equation. |  |
| Given the cubic equation , let and show that the equivalent equation has a solution which is the intersection of the hyperbola and the parabola . |  |
| Show that if is a root of the polynomial then is a factor of that polynomial; similarly show that if r is a root of the polynomial then is factor of that polynomial. [Hint, use long division.] |  |
| Show that if then and . |  |
| Problem (translated) from an old text: A man put one pair of rabbits in a certain place entirely surrounded by a wall, How many rabbits can be produced from that pair in a year, if the nature of these rabbits is such that every month each pair bears a new pair which from the second month on becomes productive? |  |
| Show that the ratio of the (n+1)th Fibonacci number to the nth limits to the golden ratio. |  |
| Given the general cubic equation: , find a value for so that the transformation transforms the equation into one without a quadratic term. |  |
| Solve the cubic equation. |  |
| Solve the quartic equation. |  |
| Fibonacci problem: A man entered an orchard through 7 gates and picked some apples. When he left, he gave the first guard half his apples and 1 apple more. To the second guard he gave half his remaining apples and 1 more. He did the same to each of the remaining five guards and left the orchard with 1 apple. How many apples did he gather in all? |  |
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