Algebra II Ciphering

Haynes Mu Alpha Theta 2019

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| 1. Factor $x^3 - 3x^2 - 10x + 24$ | |
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| 2. Solve for x : $log_5(x^3) = 12$ | |
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: $\frac{1}{x-3} + \frac{1}{x+3} = \frac{4}{x^2-9}$

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| 4. | Find all x-values at which these two graphs intersect: | |
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| | $y=3x^2-7x+3$ | |
| | $y = x^2 + 2x + 3$ | Code: |
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| 5. Seline is currently 2/3 of Kyle's age. Thirty years ago, Seline was 1/9 of Kyle's age then. If Seline and Kyle have known each other for ten years, how old was Seline when they met? | | |
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| 6. If a geometric series has a common ratio of $r = 5/2$, and its t | third term is 32, find the sixth term. |
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| 6. If a geometric series has a common ratio of $r = 5/2$, and its t | hird term is 32, find the sixth term. |
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| 7. If $g(x) = log(x - 4) + 3$, find $g^{-1}(x)$. | |
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| 8. For which values of x is $(\ln x)^2 = 2\ln x$? | |
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| 9. Find ALL solutions (real and complex) to the equation $x^3 + 9x - x^2 - 9 = 0$. | | |
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| 9. Find ALL solutions (real and complex) to the equation $x^3 + 9$. | $x - x^2 - 9 = 0.$ | |
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| 10. Find the domain of $f(x) = \frac{\sqrt{18-3x}}{\sqrt{x}}$ | |
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Algebra II Ciphering Solution Key

(Note: variable names are **not** needed in answer. So if the answer is "x=5", simply "5" is acceptable)

- 1. (x-4)(x-2)(x+3)
- 2. x = 625
- 3. x = 2
- 4. x = 0, $x = \frac{9}{2}$
- 5. 22
- 6. 500
- 7. $g^{-1}(x) = 10^{x-3} + 4$
- 8. $x = 1, x = e^2$
- 9. x=1, 3i, -3i
- 10. (0, 6] or $0 < x \le 6$