

Unit 2 Test Review

1. Divide Using Long Division: $(3x^4 - 5x^3 + 2x^2 + 3x - 2) \div (3x - 2)$
2. Divide Using Long Division. $(2x^3 + 9x^2 + 14x + 5) \div (2x + 1)$.
Using your answer
 - (a) Is $(2x + 1)$ a factor?
 - (b) If so, write $(2x^3 + 9x^2 + 14x + 5)$ in factored form.
 - (c) If so, find ALL solutions.
3. Divide Using Synthetic Division: $(x^3 - 4x^2 + 6x - 4) \div (x - 2)$
4. Using Synthetic Division to *Solve* Completely, Given $x = 1$ is a solution: $(x^3 + 3x^2 - x - 3)$
5. Determine $P(-2)$ of $P(x) = x^3 + 4x^2 - 8x - 6$ using the *Remainder Theorem*.

Solve Completely:

6. $x^3 + 13x = 10x^2$
7. $64x^3 = -8$
8. $x^4 - 64 = 0$
9. $x^4 + 7x^2 = 18$
10. $3x^3 - 6x^2 - 9x = 0$
11. The table below shows average annual consumption of cheese per person in the U.S. for selected years from 1910 to 2001. Determine which model best fits the data (linear, quadratic, or cubic). State the model. Use your given model to estimate cheese consumption in the year 1982.

Year	Pounds Consumed
1910	4
1940	5
1970	8
1975	10
1995	25
2001	30

12. Expand: $(2 + 2x)^4$