

Honors Algebra II Chapter 5 Worksheet

1. Simplify

a) $(4x^2y^{-3})^3$

b) $\frac{12x^3y^{-5}z^2}{3xy^2}$

c) $\frac{7x^2y^5}{2z^{-3}} \frac{8x^3z^4}{y^2}$

2. Describe the end behavior of the graphs using 'As x approaches $\rightarrow \infty$ ' notation.

a) $f(x) = -5x^3 - 8x^2 + 3,234x - 2$

b) $h(x) = 8x^4 - 3x^2 + 9$

3. Add, subtract or multiply the polynomials.

a) $(3x^2 - 4x) - (8x - 3)$

b) $(x - 3)(2x^2 - x + 3)$

c) $(x - 3)(2x + 1)(3x + 2)$

d) $(2x - 5)^3$

4. Factor.

a) $x^3 + 8$

b) $27x^3 - 343$

c) $25x^3 - 100x^2 - x + 4$

5. Divide $(4x^4 + 5x - 4) \div (x^2 - 3x - 2)$ using long division.

6. Find all the zeros of $f(x) = 3x^3 + 34x^2 + 72x - 64$, given that one is -4.

7. Find all the possible rational zeros of $f(x) = 8x^4 - 7x^3 + 2x^2 - 24$

8. Find all zeros of the following.

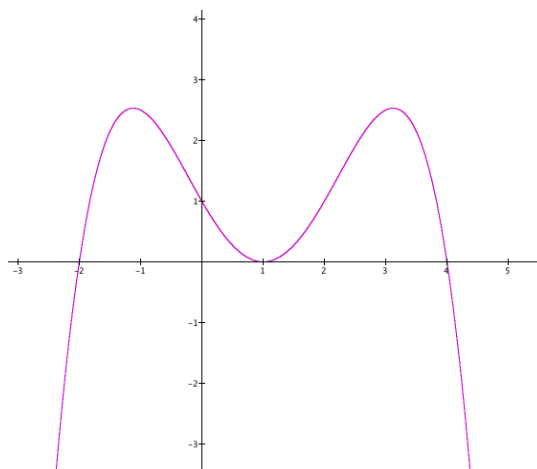
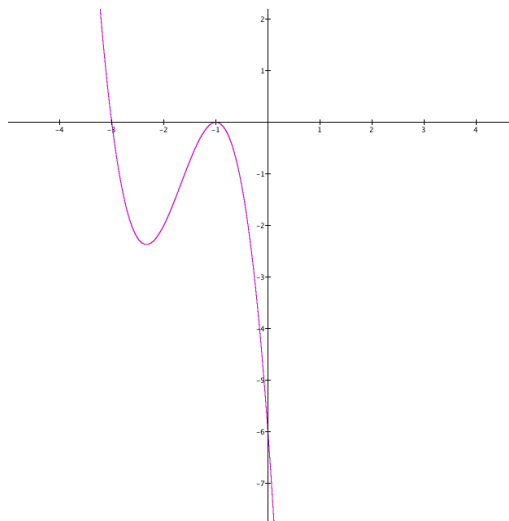
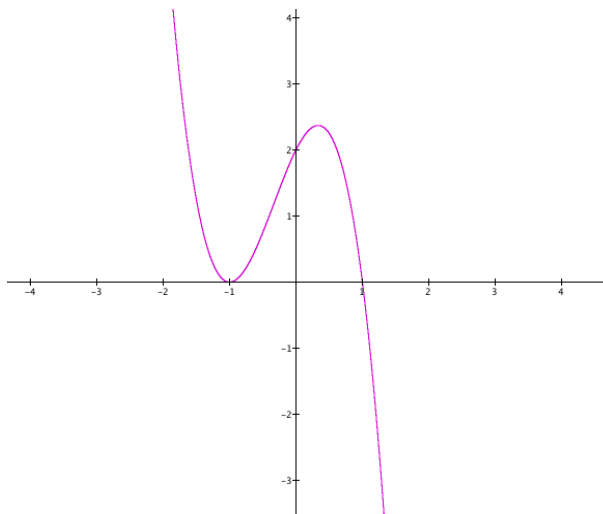
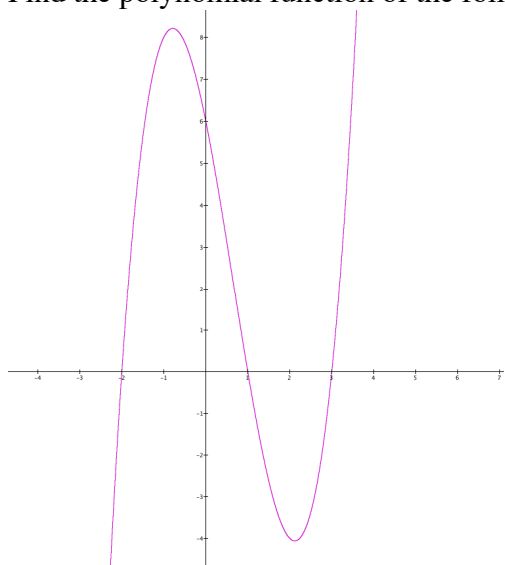
a) $f(x) = x^4 - 81$

b) $f(x) = x^3 - 6x^2 + 13x - 10$

c) $f(x) = 2x^3 + 3x^2 + 50x + 75$

d) $f(x) = 2x^4 - x^3 + 7x^2 - 4x - 4$ e) $f(x) = x^4 - 4x^3 + 8x^2 - 16x + 16$

9. Find the polynomial function of the following graphs.



10. Write the polynomial function that has rational coefficients, a leading coefficient of 1 and the given zeros.

a) $2, 4i$

b) $-3, 2-i$

c) $1, 2 + \sqrt{3}$