Honors Pre-Calc 10-23-07

p.216 1-36, skip divisible by 4, 49-55

2. $f(x) = (x^2 - x + 1)(x + 1) - 2; \frac{f(x)}{x+1} = x^2 - x + 1 - \frac{2}{x+1}$

6. $f(x) = (x^2 - 3x + 5)(x^2 + 1); \frac{f(x)}{x^2+1} = x^2 - 3x + 5$

10. $3x^3 - 14x^2 + 66x - 321 + \frac{1602}{x+5}$

14. -4

18. 23

22. Yes

26. $f(x) = (x + 2)(x - 3)(5x - 7)$

30. $2x^4 + 3x^3 - 14x^2 - 15x$

34. $\frac{\pm 1, \pm 2, \pm 7, \pm 14}{\pm 1, \pm 3}; \frac{7}{3}$

50. Rational zero: -3; irrational zeros: $\pm\sqrt{3}$

54. Rational: -1 and 2; irrational: $\pm\sqrt{5}$

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1. Write the difference in standard form $a+bi$.

$$\left(\sqrt{7}+i^2\right)-\left(6-\sqrt{-81}\right)$$

2. Write the product in standard form $a+bi$.

$$\left(\sqrt{-2}+2i\right)\left(6+5i\right)$$

3. Find the real numbers x and y that make the equation true.

$$(x+6i)=(3-i)+(4-2yi)$$

4. Write the complex number in standard form.

$$\left(\frac{\sqrt{3}}{2}+\frac{1}{2}i\right)^3$$

5. Find the product of the complex number and its conjugate.

$$-1-\sqrt{2}i$$

6. Write the expression in standard form.

$$\frac{\left(1-\sqrt{2}i\right)\left(1+i\right)}{\left(1+\sqrt{2}i\right)}$$

7. Solve the equation.

$$x^2 + x + 11 = 5x - 8$$

8. Plot the given points. Draw the line segment connecting them, find its length, and midpoint.

$$-5 + i, \qquad 3 + 4i$$