Pre-Calc   Name_____

Homework 2.4

Divide using synthetic division.

1) $\dfrac{-3x^3 - 15x^2 + 21x + 18}{x + 6}$ 1) _____

2) $\dfrac{x^5 + x^2 - 2}{x - 2}$ 2) _____

Use synthetic division and the Remainder Theorem to find the indicated function value.

3) $f(x) = x^4 + 7x^3 + 3x^2 + 9x - 6; f(-4)$ 3) _____

For questions 4 - 6, solve the polynomial.

4) Use synthetic division to divide $f(x) = x^3 - 10x^2 + 31x - 30$ by $x - 2$. Use the result to find   4) _____
   all zeros of f.

5) Solve the equation $8x^3 - 46x^2 + 31x - 5 = 0$ given that $\dfrac{1}{2}$ is a root.   5) _____

6) Solve the equation $3x^3 - 14x^2 + 17x - 6 = 0$ given that 1 is a zero.

6) _____

Use synthetic division to show that the number given to the right of the equation is a solution of the equation, then solve the polynomial equation.
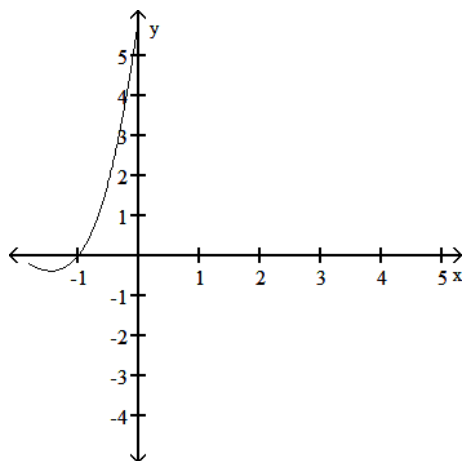
7) $2x^3 + 3x^2 - 14x - 15 = 0; -3$

7) _____

Use the graph or table to determine a solution of the equation. Use synthetic division to verify that this number is a solution of the equation. Then solve the polynomial equation.

8) $x^3 + 6x^2 + 11x + 6 = 0$

8) _____

9) $2x^3 + 11x^2 + 17x + 6 = 0$

9) _____

x	y1
-2	0
-1	-2
0	6
1	36
2	100
3	210

2