HW 3 – Synthetic Division and Remainder Theorem Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Divide using Synthetic Division.*

1. $(x^{3}-8x^{2}+17x-10)÷(x-5)$ 2. $(x^{3}+5x^{2}-x-9)÷(x+2)$

3. $\left(-2x^{3}+15x^{2}-22x-15\right)÷\left(x-3\right)$ 4. $\left(x^{3}+7x^{2}+15x+9\right)÷\left(x+1\right)$

5. $\left(x^{3}+2x^{2}+5x+12\right)÷\left(x+3\right)$ 6. $\left(x^{4}+\frac{5}{3}x^{3}-\frac{2}{3}x^{2}+6x-2\right)÷\left(x-\frac{1}{3}\right)$

7. $(x^{4}-5x^{3}+5x^{2}+7x-12)÷(x-4)$ 8. $(6x^{3}+2x^{2}-11x+12)÷(3x+4)$

*Use the Remainder Theorem to find P(a).*

9. $P\left(x\right)=3x^{3}-4x^{2}-5x+1;a=2$ 10. $P\left(x\right)=x^{3}+7x^{2}+12x-3;a=-5$

11. $P\left(x\right)=x^{3}+6x^{2}+10x+3;a=-3$ 12. $P\left(x\right)=2x^{4}-9x^{3}+7x^{2}-5x+11;a=4$