# Classwork Synthetic Division

Please work all problems on a separate sheet of paper.

In exercises 1 – 8, perform the indicated divisions using synthetic division.

1. $\dfrac{x^2-3x+5}{x-2}$

2. $\dfrac{2x^2+9}{x+2}$

3. $\dfrac{2x^3-7x^2-x+6}{x-3}$

4. $\dfrac{x^3-7x-4}{x+2}$

5. $\dfrac{3x^3+11x^2-5x}{x+4}$

6. $\dfrac{2x^4-9x^3+10x+24}{x-4}$

7. $\dfrac{x^3+125}{x+5}$

8. $\dfrac{x^6-64}{x-2}$

In exercises 9 – 10, use synthetic division to find the remainder when f(x) is divided by d(x) to decide if d(x) is a factor of f(x). If d(x) is a factor of f(x), express f(x) as d(x)·q(x).

9. $f(x)=x^3+x^2-11x+10 \quad and \quad d(x)=x-2$

10. $f(x)=2x^4-7x^2+x-1 \quad and \quad d(x)=x+3$