Advanced Algebra II Quiz 7.1-7.5 Name

 Block

Factor the following completely. (3pts each)

1. 12a3b5 + 18ac 2. 9x2 – 36 3. x2 + 14xy – 15y2

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. 4x2 + 2x – 30 5. 4z2 + 25z + 6 6. 9x2 – 48x + 64

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. x3 + c3 8. 8p3 – w3 9. (x + a)y + (x + a)(3p-4)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10. Prove that 36x2 + 72x + 25 is prime. (3pts each)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Multiply.(3pts each)

11. (3x – 7)(4x + 8) 12. (x2 – 7x + 3)(x – 4)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

13. (5x + 11)2 14. (x – 3)(x + 5)(x – 8)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Divide by using long division. Write the answer in mixed-number (or polynomial ) form.

15. $\frac{4x^{3}-3x^{2}+ 7x-19}{x-2 } $ 16. $\frac{x^{3}- 11}{x+3}$

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Use synthetic division to find the quotient and remainder. (3pts each)

17. $\frac{x^{4}-2x^{3}-70x +20}{x-5 }$ 18. $\frac{10x^{4}+ 5x^{3}+ 4x^{2}- 9}{x+1}$

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Sketch the graph, showing especially the behavior where the denominator equals zero. On the line provided, write any discontinuities. (3pts each)

19. *f*(x) = $\frac{1}{x-3 }$ 20. *g*(x) = $\frac{\left( x+2\right)(x-3)}{x+2}$

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_