

Math 3 Unit 3 Worksheet 5
Factoring by Grouping

Name: _____
Date: _____ Per: _____

Factor completely over the integers:

1. $x(x + 2) + 3(x + 2)$

2. $x(x^2 + 5) - 9(x^2 + 5)$

3. $x^2(x - 7) - 4(x - 7)$

4. $x(x^2 + 3) - (3 + x^2)$

5. $3x(x - 2) - (2 - x)$

6. $a(r + s) - b(r + s) + c(r + s)$

7. $a(y - 1) - b(1 - y)$

8. $9(2c - d) + x^2(d - 2c)$

9. $ac + bc + ad + bd$

10. $5x - 5 + x^2 - x^3$

11. $2x^3 - 10x^2 - 2x + 10$

12. $3w^3 - 3w^2z + 18w^2 - 18wz$

13. $7c^3 - 28c^2 + 12 - 3c$

14. $12 - 28x - 3x^2 + 7x^3$

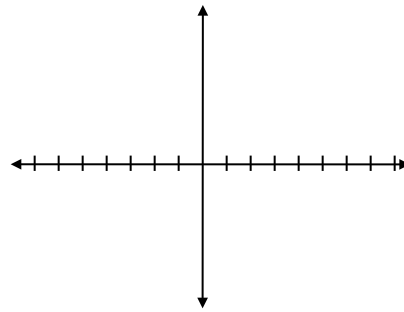
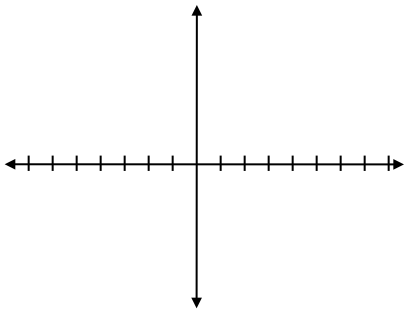
15. $4x^5 - x^3 + 8x^2 - 2$

16. $k^3x + k^2x^3 + k + x^2$

Factor and sketch the polynomial functions. Label x and y intercepts.

17. $y = x^3 + 4x^2 - 4x - 16$

18. $f(x) = 3x^3 + 9x^2 - 27x - 81$



19. $y = (f - g)(x)$ if
 $f(x) = x^4 + x^3$ and $g(x) = 16x^2 + 16x$

20. $y = f(x) - g(x)$ if
 $f(x) = 4x^4 + 8x^3$ and $g(x) = 16x^2 + 32x$

