**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Block \_\_\_\_\_**

**Factor each polynomial expression completely.**

**1.** 21 – 7x + 3y – xy **2.** 15a2b – 10ab2 **3.** 45x2 – 80y2

**4.** 6x4 – 11x2 – 2 **5.** 8x3 – 27y6 **6.** x3 + 216

**7.** x2 + 2x – xy – 2y **8.** 36a3b2 + 66a2b3 - 210ab4 **9.** 2x3y – x2y + 5xy2 + xy3

**Solve each polynomial equation over the set of complex numbers by factoring.**

1. 16x2 – 169 = 0 **11.** 2x2 – 242 = 0 **12.** 8x3 = 1

**13.** 4x6 + x4 = 3x2 **14.** 4x6 – 4x2 = 0 **15.** 5x5 + 135x2 = 0

**16.** x3 – 27 = 0 **17.** x4 – 81 = 0 **18.** x3 + 3x2 - 54x = 0

**19.** 2x3 + 32x2 + 128x = 0 **20.** 81x4 = 16 **21.** x4 + 64x = 0

**22.** 4x6 - 4x2 = 0 **23.** x3 = 64 **24.** 14x3 + 11x2 = 9x

**25.** 2x3 + 250 = 0 **26.** x4 – 5x2 = -4 **27.** x6 = 1

**28.** x4 – 1 = 0 **29.** x4 – 6x2 = -8 **30.** 3x3 – x2 + 3x – 1 = 0

**31.** x3 – 5x2 – 9x + 45 = 0 **32.** 9x4 + 24x3 = -16x2 **33.** 2x4 + 250x = 0

