**Finding Common Monomial Factors**

1. One way to write a polynomial in factored form is to find a common monomial factor for each of the terms and apply the distributive property. Here is an example in which the binomial $18x^{2}-24x$ is factored in several different ways. Fill in the blanks to complete each factorization.
2. $18x^{2}-24x$ = 2 (\_\_\_\_\_ – \_\_\_\_\_) b. $18x^{2}-24x$ = *x* (\_\_\_\_\_ – \_\_\_\_\_)
3. $18x^{2}-24x$ = 3*x* (\_\_\_\_\_ – \_\_\_\_\_) d. $18x^{2}-24x$ = $6x $(\_\_\_\_\_ – \_\_\_\_\_)
4. Common factors of $18x^{2}$ and 24*x* include 1, 2, 3, 6, *x*, 2*x*, 3*x*, and 6*x.* Which of these is the greatest common factor (GCF)? Explain.
5. A factorization of a binomial of the form $ax^{2}+bx $is “complete” when the terms in the binomial factor have no common factor. Which of the factorizations in a–d are complete?
6. Factor completely each of these polynomials by finding the greatest common monomial factor.
7. $40x-5$ b. $36x^{2}+27x$
8. $14x^{3}+7x^{2}-21$ d. $15x-25x^{2}$
9. Solve each of these equations by finding the greatest common monomial factor and then applying the Zero Product Property.
10. $x^{2}-6x=0$ b. $3x^{2}+15x=0$
11. $4x^{2}-2x=0$ d. $35x^{2}+25x=0$