

12.3.D3 ~ Factoring Polynomials

Past due on _____ Period _____

Factor each trinomial completely. REMEMBER TO LOOK FOR COMMON FACTORS FIRST! (If necessary, refer to 12.3 example, "Factoring Trinomials" in the Chapter 12 Summary.)

1) $3a^2 + 3a - 18$

2) $5p^2 - 30p - 80$

3) $3x^2 + 9x - 54$

4) $7x^2 + 13x - 2$

5) $5x^2 + 22x + 8$

6) $9n^2 + 24n - 9$

7) $2n^2 - 9n + 10$

8) $4n^2 - 15n - 25$

9) $6k^2 + 7k + 2$

10) $6n^2 - 11n + 4$

QUADRATIC FUNCTIONS REVIEW ~ If necessary, refer to ALL examples in the Chapter 11 Summary.

- 11) The equation of a parabola is $f(x) = x^2 - 4x - 5$. The axis of symmetry is $x = 2$. Determine the coordinates of the vertex of the parabola.
- 12) Write the equation of the quadratic function described: A parabola which opens downward and has zeros $(5, 0)$ and $(-2, 0)$. Let $a = \pm 3$.
- 13) Write the equation of the quadratic function described: The vertex is $(2, 8)$ and the parabola opens up. Let $a = \pm 3$.
- 14) Determine the vertex of a parabola represented by the equation $f(x) = x^2 - 2x - 8$. Two symmetric points on the parabola are $(2, -8)$ and $(0, -8)$.
- 15) The axis of symmetry of a parabola is $x = 6$, and one point on the parabola is $(2, 8)$. What is another point on the parabola?
- 16) Use a graphing calculator to graph the function $f(x) = 2(x - 4)^2 - 7$. Identify the following characteristics:
- Domain
 - Range
 - Vertex
 - Axis of symmetry
 - Zeros
 - y-intercept
 - Interval of increase
 - Interval of decrease