**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_\_**

**Factoring Trinomials – Worksheet 544**

**Factor each trinomial, if possible. If the trinomial cannot be factored using integers, write *prime*.**

**1.** 2$b^{2}$ + 10*b* + 12 **2.** 3$g^{2}$ + 8*g* + 4 **3.** 4$x^{2}$ + 4*x* – 3

**4.** 8$b^{2}$ – 5*b* – 10 **5.** 6$m^{2}$ + 7*m* – 3 **6.** 10$d^{2}$ + 17*d* – 20

**7.** 6$a^{2}$ – 17*a* + 12 **8.** 8$w^{2}$ – 18*w* + 9 **9.** 10$x^{2}$ – 9*x* + 6

**10.** 15$n^{2}$ – *n* – 28 **11.** 10$x^{2}$ + 21*x* – 10 **12.** 9$r^{2}$ + 15*r* + 6

**13.** 12$y^{2}$ – 4*y* – 5 **14.** 14$k^{2}$ – 9*k* – 18 **15.** 8$z^{2}$ + 20*z* – 48

**16.** 12$q^{2}$ + 34*q* – 28 **17.** 18$h^{2}$ + 15*h* – 18 **18.** 12$p^{2}$ – 22*p* – 20

**Solve each equation. Check your solutions.**

**19.** 3$h^{2}$ + 2*h* – 16 = 0 **20.** 15$n^{2}$ – *n* = 2 **21.** 8$q^{2}$ – 10*q* + 3 = 0

**22.** 6$b^{2}$ – 5*b* = 4 **23.** 10$c^{2}$ – 21*c* = –4*c* + 6 **24.** 10$g^{2}$ + 10 = 29*g*

**25.** 6$y^{2}$ = –7*y* – 2 **26.** 9$z^{2}$ = –6*z* + 15 **27.** 12$k^{2}$ + 15*k* = 16*k* + 20

**28.** 12$x^{2}$ – 1 = –*x* **29.** 8$a^{2}$ – 16*a* = 6*a* – 12 **30.** 18$a^{2}$ + 10*a* = –11*a* + 4

**31. DIVING** Lauren dove into a swimming pool from a 15-foot-high diving board with an initial upward velocity of 8 feet per second. Find the time *t* in seconds it took Lauren to enter the water. Use the model for vertical motion given by the equation *h* = –16$t^{2}$ + *vt* + *s*, where *h* is height in feet, *t* is time in seconds, *v* is the initial upward velocity in feet per second, and *s* is the initial height in feet. (Hint: Let *h* = 0 represent the surface of the pool.)

**32. BASEBALL** Brad tossed a baseball in the air from a height of 6 feet with an initial upward velocity of 14 feet per second. Enrique caught the ball on its way down at a point of 4 feet above the ground. How long was the ball in the air before Enrique caught it? Use the model of vertical motion from Exercise 31.