

**Factor completely.**

1.  $x^2 + 5x - 84$
2.  $4x^2 - 13x + 10$
3.  $x^3 - 1000$
4.  $x^2 - 13x + 40$
5.  $2x^2 - 10x - 28$
6.  $x^3 - 7x^2 + 3x - 21$
7.  $49x^2 - 36y^2$
8.  $m^2n^3 - m^5n^2 + m^3n$
9.  $x^2 + 8x + 12$

**Solve.**

10.  $x^2 - 81 = 0$
11.  $x^2 + 6x - 40 = 0$
12.  $x^2 + 13x = 6x - 10$
13.  $x^2 - 11x + 24 = 0$
14.  $(2x + 7)(x - 5) = 0$

**Word Problems**

*You must set up an equation and solve it to receive any points.*

15. Two consecutive positive integers have a product of 182. Find the integers.
16. Rosa is 11 years older than Dale. If the product of their ages is 126, how old is each person?
17. The length of a rectangular rug is 3 feet more than its width. If the area of the rug is 40 square feet, find the length and width of the rug.