8-5 Factoring $x^2 + bx + c$

Factor completely (1-4):

1. $x^2 + 6x + 5$

$(x+5)(x+1)$

2. $x^2 - 11x - 42$

$(x-14)(x+3)$

3. $3x^2 - 15x + 18$

$3(x^2 - 5x + 6)$

$= 3(x-2)(x-3)$

4. $-2x^3 + 10x^2 + 28x$

$-2x(x^2 - 5x - 14)$

$-2x(x-7)(x+2)$

5. What is the length of a rectangle that has a width of $x - 3$ and an area of $x^2 - 18x + 45$?

$(x-3)(\ ?\ ) = x^2 - 18x + 45$

$(x-3)(x-15)$

The length of the rectangle is $x-15$.