

Factor the following polynomials. Some of the problems will use special patterns, such as a sum of cubes, or a difference of squares.

$x^2 - 15x - 76$	$3y^2 + 14y + 16$
$b^2 + 45b$	$w^4 - 49w^2$
$9x^2 - 81$	$4a^2 - 20a + 25$
$64k^3 + 125$	$64r^3 - 125$

Solve for x by factoring.

$x^2 - 14x + 48 = 0$	$3y^2 + 4y - 64 = 0$
$4e^2 - 5e + 1 = 0$	$6f^2 + 11f + 4 = 0$

Solve for x by completing the square.

$d^2 - 2d - 48 = 0$	$g^2 + 20g - 99 = 0$
$3e^2 - 5e - 2 = 0$	$3f^2 + 6f + 2 = 0$

Solve for x by using the quadratic formula.

$z^2 - 9z - 20 = 0$	$z^2 + 9z - 20 = 0$
$x^2 - 27 = 0$	$6f^2 + 12f + 4 = 0$

Extra! If each of the following parabolas were graphed, where would these graphs cross the x -axis (i.e., where are the x -intercepts of the following graphs)?

$$f(x) = x^2 - 81$$

$$g(x) = 4x^2 - 4x + 1$$

$$h(x) = 18x^2 - 39x + 18$$

Questions? E-mail me at *cynan.deleon@gmail.com*.