Fill in the Blanks	Solving Hidden Quadratics

Hidden Quadratic	Substitution $y = \cdots$	Quadratic in terms of y	Factorise and Solve Quadratic	Solutions to Hidden Quadratic
$x^4 - 6x^2 + 8 = 0$	$y = x^2$	$y^2 - 6y + 8 = 0$	$(y-4)(y-2) = 0$ $y = 4, y = 2$	$x^2 = 4, x^2 = 2$ $x = \pm 2, x = \pm\sqrt{2}$
$a^6 - 28a^3 + 27 = 0$	$y = a^3$	$y^2 - 28y + 27 = 0$	$(y-27)(y-1) = 0$ $y = 27, y = 1$	$a^3 = 27, a^3 = 1$ $a = 3, a = 1$
$b + \sqrt{b} - 12 = 0$	$y = \sqrt{b}$	$y^2 + y - 12 = 0$	$(y+4)(y-3) = 0$ $y = -4, y = 3$	$\sqrt{b} = -4, \sqrt{b} = 3$ $b = 9$ only
$2^{2x} - 5 \times 2^x + 4 = 0$	$y = 2^x$	$y^2 - 5y + 4 = 0$	$(y-4)(y-1) = 0$ $y = 4, y = 1$	$2^x = 4, 2^x = 1$ $x = 2, x = 0$
$4w^4 - 13w^2 + 9 = 0$	$y = w^2$	$4y^2 - 13y + 9 = 0$	$(4y-9)(y-1) = 0$ $y = \frac{9}{4}, y = 1$	$w^2 = \frac{9}{4}, w^2 = 1$ $w = \pm\frac{3}{2}, w = \pm 1$
$9 \times 3^{2z} - 82 \times 3^z + 9 = 0$	$y = 3^z$	$9y^2 - 82y + 9 = 0$	$(y-9)(9y-1) = 0$ $y = 9, y = \frac{1}{9}$	$3^z = 9, 3^z = \frac{1}{9}$ $z = 2, z = -2$
$6t^{2/3} - 5t^{1/3} - 4 = 0$	$y = \sqrt[3]{t}$	$6y^2 - 5y - 4 = 0$	$(3y-4)(2y+1) = 0$ $y = \frac{4}{3}, y = -\frac{1}{2}$	$\sqrt[3]{t} = \frac{4}{3}, \sqrt[3]{t} = -\frac{1}{2}$ $t = \frac{64}{27}, t = -\frac{1}{8}$