QUADRATIC EQUATIONS WITHOUT A CONSTANT TERM

Solve:

1 $x^2 - 6x = 0$ **2** $x^2 - 5x = 0$ **3** $x^2 + 5x = 0$ **4** $x^2 + 10x = 0$

① $\Leftrightarrow x(x-6) = 0$ so either $x = 0$ or $x = 6$

② $x^2 - 5x = 0 \Leftrightarrow x(x-5) = 0$ so either $x = 0$ or $x = 5$

③ $x^2 + 5x = 0 \Leftrightarrow x(x+5) = 0$ so either $x = 0$ or $x = -5$

④ $x^2 + 10x = 0 \Leftrightarrow x(x+10) = 0$

so either $x = 0$ or $x = -10$

QUADRATIC EQUATIONS WITHOUT A CONSTANT TERM

10 $6x^2 = 24x$ **11** $2x^2 - x = 0$ **12** $5x^2 + x = 0$ **13** $3x^2 = -9x$

(10) $6x^2 = 24x \iff 6x^2 - 24x = 0$

$\iff x^2 - 4x = 0$

$\iff x(x-4) = 0$

so either $x = 0$ or $x = 4$

(11) $2x^2 - x = 0 \iff x(2x-1) = 0$

so either $x = 0$ or $2x - 1 = 0$

$\iff x = 1/2$

(12) $5x^2 + x = 0 \iff x(5x+1) = 0$

so either $x = 0$ or $5x + 1 = 0$

$\iff x = -1/5$

(13) $3x^2 = -9x \iff x^2 = -3x$

$\iff x^2 + 3x = 0$

$\iff x(x+3) = 0$

so either $x = 0$ or $x = -3$