Harder Solve Practice #2

Solve:

1. $x^2 = 8x - 12$
2. $\frac{x+6}{3} = 5$
3. $x^2 = \frac{7x}{2}$
4. $4x^2 = 8x + 396$
5. $x^2 = 10 - 3x$
6. $\frac{3x+4}{8} = 5$
7. $5x = \frac{x^2}{3}$
8. $\frac{x^2+25}{5} = {}^{-}2x$
9. $3 = 2\frac{3}{4}(x + 5)$
10. $72x^{-2} = 2$

These are significantly harder

11. $\frac{3}{x+1} = \frac{7}{2x}$
12. $\frac{3}{x-1} = \frac{4}{x+3}$
13. $\frac{x+1}{x-4} = 8$
14. $(\frac{x}{5} + 1)^2 = 4$
15. $\frac{x}{4} + \frac{1}{x+1} = 1$
16. $\frac{2}{2x-1} = \frac{-4}{x+5}$
17. $\frac{3}{x-2} + \frac{4}{x+1} = 0$
18. $\frac{2}{x+5} = \frac{x}{x+2}$
19. $x^3 - 9x = 0$
20. $\frac{4}{x-1} + \frac{2}{x+4} = 1$

Answers: Harder Solve Practice #2

To remove a fraction you multiply **all** the equation by the denominator

1.	$x^2 = 8x - 12$	$x^2 - 8x + 12 = 0$	$(x - 6)(x - 2) = 0$	$x = 2$ or 6
2.	$\frac{x+6}{3} = 5$	$\times 3 =$	$x + 6 = 15$	$x = 9$
3.	$x^2 = \frac{7x}{2}$	$2x^2 - 7x = 0$	$x(x - 3.5) = 0$	$x = 0$ or 3.5
4.	$4x^2 = 8x + 396$	$\div 4 =$	$x^2 - 2x - 99 = 0$	$x = 11$ or $^-9$
5.	$x^2 = 10 - 3x$		$x^2 + 3x - 10 = 0$	$x = ^-5$ or 2
6.	$\frac{3x+4}{8} = 5$	$\times 8 =$	$3x + 4 = 40$	$x = 12$
7.	$5x = \frac{x^2}{3}$	$\times 3 =$	$x(x - 15) = 0$	$x = 0$ or 15
8.	$\frac{x^2+25}{5} = ^-2x$	$\times 5 =$	$x^2 + 10x + 25 = 0$	$x = ^-5$
9.	$3 = 2\frac{3}{4}(x + 5)$	$\times \frac{4}{11} =$	$\frac{12}{11} = x + 5$	$x = \frac{-43}{11} = ^-3.909$
10.	$72x^{-2} = 2$	$\times x^2 \quad \div 2 =$	$36 = x^2$	$x = \pm 6$

If there are two denominators to remove, you multiply all terms by both

11.	$\frac{3}{x+1} = \frac{7}{2x}$	$\times 2x\,(x + 1) =$	$3(2x) = 7(x + 1)$	$x = ^-7$
12.	$\frac{3}{x-1} = \frac{4}{x+3}$	$\times (x - 1)(x + 3) =$	$3(x + 3) = 4(x - 1)$	$x = 13$
13.	$\frac{x+1}{x-4} = 8$	$\times (x - 4) =$	$x + 1 = 8(x - 4)$	$x = \frac{33}{7} = 4.7143$
14.	$(\frac{x}{5} + 1)^2 = 4$	$\frac{x}{5} + 1 = \pm\sqrt{2}$	$x = 5(\pm\sqrt{4} - 1)$	$x = 5$ or $^-15$
15.	$\frac{x}{4} + \frac{1}{x+1} = 1$	$\times 4(x + 1) =$	$x(x + 1) + 4 = 4(x + 1)$	$x = 0$ or 3
16.	$\frac{2}{2x-1} = \frac{-4}{x+5}$	$\times (2x - 1)(x + 5) =$	$2(x + 5) = ^-4(2x - 1)$	$x = ^-0.6$
17.	$\frac{3}{x-2} + \frac{4}{x+1} = 0$	$\times (x + 1)(x - 2) =$	$3(x + 1) + 4(x - 2) = 0$	$x = \frac{5}{7} = 7.1429$
18.	$\frac{2}{x+5} = \frac{x}{x+2}$	$\times (x + 6)(x + 2) =$	$2(x + 2) = x\,(x + 6)$	$x = 1$ or $^-4$
19.	$x^3 - 9x = 0$	$x(x^2 - 9) = 0$	$x(x - 3)(x + 3) = 0$	$x = 0, 3$ or $^-3$
20.	$\frac{4}{x-1} + \frac{2}{x+4} = 1$	$\times (x + 4)(x - 1) =$	$4(x + 4) + 2(x - 1) = 1(x + 4)(x - 1)$	$x = 6$ or $^-3$