

Dr. Sturm

		ANSWERS
1	Solve for x: $\frac{3x}{2} - \frac{5}{3} = \frac{2x}{3} + 5$	$x = 8$
2	Simplify: i^{27}	$-i$
3	Multiply: $(3i + 1)(2i - 5)$	$-11 - 13i$
4	Divide: $\frac{3+2i}{5-i} =$	$\frac{1}{2} + \frac{1}{2}i$
5	Solve for x: $6x^2 = 1 - x$	$x = \frac{1}{3}; x = -\frac{1}{2}$
6	Solve for x: $x(2x - 9) = -10$	$x = \frac{5}{2}; x = 2$
7	Solve for x: $(3x + 1)^2 - 4 = 0$	$x = \frac{1}{3}; x = -1$
8	Solve for x: $(2x - 1)^2 + 5 = 0$	$x = \frac{1}{2} \pm \frac{\sqrt{5}}{2}i$
9	Solve for x: $2x^2 = 5x$	$x = 0; x = 5/2$
10	Solve by completing the square: $x^2 - 10x + 2 = 0$	$x = 5 \pm \sqrt{23}$
11	Solve using the quadratic formula: $2x^2 - 5x - 10 = 0$	$\frac{5 \pm \sqrt{105}}{4}$
12	Find the discriminant and determine the type of roots: A) $4x^2 - 4x + 1$ B) $3x^2 - 2x + 1$ C) $5x^2 + 10x + 1$ D) $x^2 - 4x - 5$	A) 0; <i>one rational root</i> B) -8; <i>no real roots</i> C) 80; <i>two real roots</i> D) 36; <i>two rational roots</i>
13	Solve for x: $x^4 + 2x^3 = 15x^2$	$x = 0; x = -5; x = 3$
14	Find the real solutions of: $x^3 - 8 = 0$	$x = 2$
15	Solve for x: $\frac{x}{x-4} - \frac{4}{x+4} = \frac{8x}{x^2-16}$	No solution
16	Solve for x: $\sqrt[3]{3x-1} = 5$	$x = 42$
17	Solve for x: $x - \sqrt{6x+7} = 0$	$x = 7$
18	Solve for x: $\sqrt{3y+1} = y - 1$	$y = 5$
19	Solve for x: $\sqrt{2y+9} = 2 + \sqrt{y+1}$	$y = 0; y = 8$
20	Solve for x: $(2x+1)^{3/2} = 27$	$x = 4$
21	Solve for x: $(3x-1)^{2/3} - 1 = 8$	$x = \frac{28}{3}; x = -\frac{26}{3}$
22	Solve for x: $x - 3\sqrt{x} + 2 = 0$	$x = 4; x = 1$
23	Solve for x: $x^{2/5} + x^{1/5} - 2 = 0$	$x = -32; x = 1$
24	Solve for x: $(3x+1)^2 + 2(3x+1) - 15 = 0$	$x = -2; x = \frac{2}{3}$
25	$3 - 2(5 - 3x) < 2x - 4$	$x < \frac{3}{4}$

26	$\frac{2x+1}{3} \leq \frac{x}{4} + 1$ or $\frac{3-x}{2} > \frac{x}{3} - 1$	$x \leq \frac{8}{5}$ OR $x < 3 \rightarrow$ $x < 3$
27	$-5 < \frac{1-2x}{3} < 4$	$-\frac{11}{2} < x < 8$
28	Solve for x : $\frac{x^2-5x}{x-2} \leq 0$	$x \leq 0, 2 < x \leq 5$
29	Solve for x : $x^4 \geq 25x^2$	$x \leq -5, x = 0, x \geq 5$