

Quadratics Practice WS ALL

1-6. Factor the expression completely.

1.) $50x^2 - 98$ $2(25x^2 - 49)$ $2(5x+7)(5x-7)$	2.) $12x^2 - 27$ $3(4x^2 - 9)$ $3(2x+3)(2x-3)$
3.) $3x^2 - 14x - 5$ $(3x+1)(x-5)$	4.) $9x^2 - 12x + 4$ $(3x-2)(3x-2)$ or $(3x-2)^2$
5.) $2x^2 + 16x + 32$ $2(x^2 + 8x + 16)$ $2(x+4)^2$	6.) $2x^2 - 13x - 7$ $(2x+1)(x-7)$

7-12: Solve each equation using method of your choice. You should use each method twice.

7.) $3(x-7)^2 + 10 = 64$ $\quad \quad \quad -10 \quad -10$ $\frac{3(x-7)^2}{3} = \frac{54}{3}$ $(x-7)^2 = 18$ $\sqrt{(x-7)^2} = \pm\sqrt{18}$ $x-7 = \pm 3\sqrt{2}$ $x = 7 \pm 3\sqrt{2}$ $x = 7 \pm 3\sqrt{2}$	8.) $3x^2 + 4x = -5$ $3x^2 + 4x + 5 = 0$ $x = \frac{-4 \pm \sqrt{4^2 - 4(3)(5)}}{2(3)}$ $x = \frac{-4 \pm \sqrt{16 - 60}}{6} = \frac{-4 \pm \sqrt{-44}}{6}$ $= \frac{-4 \pm 2\sqrt{11}i}{6}$ $x = -\frac{2}{3} \pm \frac{\sqrt{11}i}{3}$
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Solve each equation using the method of your choice, continued.

9.) $3x^2 = 6x + 27$

CS

$$3x^2 - 6x - 27 = 0$$

$$x^2 - 2x - 9 = 0$$

$$x^2 - 2x + \underline{1} = 9 + \underline{1}$$

$$(x-1)^2 = 10$$

$$x-1 = \pm\sqrt{10}$$

$$x = 1 \pm \sqrt{10}$$

10.) $3x^2 + 52x = 22x + 72$

Factor

$$3x^2 + 30x - 72 = 0$$

$$x^2 + 10x - 24 = 0$$

$$(x+12)(x-2) = 0$$

$$x = -12, 2$$

9.) $3x^2 + 9 = 2x^2 + 5$

IO

$$x^2 = -4$$

$$x = \pm 2i$$

10.) $2x^2 + 6x = -7$

QF

$$2x^2 + 6x + 7 = 0$$

$$x = \frac{-6 \pm \sqrt{6^2 - 4(2)(7)}}{2(2)} = \frac{-6 \pm \sqrt{-20}}{4}$$

$$= \frac{-6 \pm 2\sqrt{5}i}{4}$$

$$x = -\frac{3}{2} \pm \frac{\sqrt{5}}{2}i$$

11.) $2x^2 = 4x + 26$

CS

$$2x^2 - 4x - 26 = 0$$

$$x^2 - 2x - 13 = 0$$

$$x^2 - 2x + \underline{1} = 13 + \underline{1}$$

$$(x-1)^2 = 14$$

$$x-1 = \pm\sqrt{14}$$

$$x = 1 \pm \sqrt{14}$$

12.) $5x^2 + 19x - 4 = 0$

Factor

$$(5x-1)(x+4) = 0$$

$$5x-1=0 \quad x+4=0$$

$$x = \frac{1}{5} \quad x = -4$$