

Chapter 7: Quadratics

Name: _____

Notes 7.6 Factoring

Changing a quadratic to factored form to find solutions

Strategy #1 : Solve by taking the square root

Example #1: Solve $x^2 - 25 = 0$

Strategy #2 : Take out the common factor

Example #2: Solve $x^2 - 3x = 0$

Example #3: Solve $3x^2 + 12x = 0$

Strategy #3 : Find two numbers

Example #4: Solve $x^2 - 6x + 5 = 0$

Strategy #3 : What to do with a number in front?

Example #5: Solve $2x^2 + 5x - 12 = 0$

STEP #1: Find two numbers that multiply to _____ and add to _____

STEP #2: Write brackets including _____ in each

STEP #3: Divide out the _____

STEP #4: Split into two parts and _____ for zero

Example #6: Solve $6x^2 - x - 2 = 0$

Strategy #4 : *Sometimes you can combine strategies*

Example #7: Solve $4x^2 + 2x - 6 = 0$

Assignment

1a) $x^2 - 11x + 28 = 0$	1c) $2y^2 + 11y + 5 = 0$
1b) $x^2 - 7x - 30 = 0$	1d) $4t^2 + 7t - 15 = 0$

2a) $x^2 - 121 = 0$	2e) $s^2 - 12s + 36 = 0$
2b) $9r^2 - 100 = 0$	2f) $16p^2 + 8p + 1 = 0$

2c) $x^2 - 15x = 0$	2g) $-14z^2 + 35z = 0$
2d) $3y^2 + 48y = 0$	2h) $5q^2 - 9q = 0$

3a) $x^2 - 9x - 70 = 0$	3c) $3a^2 + 11a - 4 = 0$
3b) $x^2 + 19x + 48 = 0$	3d) $6t^2 - 7t - 20 = 0$

4a) $12 - 5x = 2x^2$	4c) $3a^2 + 11a - 4 = 0$
4b) $4x^2 = 9 - 9x$	4d) $6t^2 - 7t - 20 = 0$
5a) $5u^2 - 10u - 315 = 0$	5c) $1.4y^2 + 5.6y - 16.8 = 0$
5b) $0.25x^2 + 1.5x + 2 = 0$	5d) $\frac{1}{2}k^2 + 5k + 12.5 = 0$

Answers

1. a) $x = 4, 7$ c) $y = -5, 0.5$
b) $x = -3, 10$ d) $t = -3, 1.25$

2. a) $x = -11, 11$ e) $s = 6$
b) $r = \frac{10}{3}, -\frac{10}{3}$ f) $p = -0.25$
c) $x = 0, 15$ g) $z = 0, 2.5$
d) $y = -16, 0$ h) $q = 0, \frac{9}{5}$

3. a) $x = -5, 14$ c) $a = -4, \frac{1}{3}$
b) $x = -16, -3$ d) $t = -\frac{4}{3}, \frac{5}{2}$

4. a) $x = -4, \frac{3}{2}$ c) $d = -\frac{3}{7}$
b) $x = -3, \frac{3}{4}$ d) $g = \frac{13}{9}, -\frac{13}{9}$

5. a) $u = -7, 9$ c) $y = -6, 2$
b) $x = -4, -2$ d) $k = -5$