MATH 5071 - Problem Set 6

Dr. Rachael M. Kratzer, rmk24@psu.edu

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Solving Quadratic Equations by Factoring

1) Solve for x by factoring:

i) $(x-3)(2x+7)=0$

ii) $x^2-3x=0$

iii) $x^2+8x=-7$

iv) $2x^2-x=3$

v) $x(2x+4)=5x+1$

vi) $3(x^2-6x+5)=2(-2x^2+2x+1)+x^2-5x+8$

Solving Quadratic Equations by Completing the Square

2) Solve for x by completing the square:

i) $x^2+8x+5=0$

ii) $x^2-6x-4=0$

iii) $5x^2+10x=-7$

iv) $x^2-10x-6=0$

v) $x^2=3x+12$

Solving Quadratic Equations with the Quadratic Formula

3) Solve for x using the quadratic formula:

i) $x^2 - 8x + 2 = 0$

ii) $11x^2 + 2x - 1 = 0$

iii) $x^2 - 9x + 21 = 8$

iv) $-(1 + x) = -x^2$

v) $-10x^2 - 8x = x^2 - 3x - 20$

Rational and Radical Equations

4) Solve for x:

i) $\frac{4}{x-5} = 3$

ii) $\frac{5}{3x+8} = \frac{3}{x-2}$

iii) $\frac{3}{x} - 5 + 4x = 2$

iv) $3\sqrt{x + 10} + 25 = 16$

v) $\sqrt{x - 1} - 2\sqrt{4x + 7} = 0$