Solving Quadratics Ticket #2 Review **Sept 21, 2015 (Mon)**

1. Solve by factoring : $4x^2 = 24x + 28$

Factored Form: _____

Solution: _____

2. Solve by completing the Square: $3x^2 - 4 = 12x + 20$

Solution: _____

3. Use quadratic formula to solve: $5x^2 = 2x + 6$

Discriminant_____

Quadratic Equation: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Nature of solution: _____

Solution(s) _____

Solving Quadratics Ticket #2 Review **Sept 21, 2015 (Mon)** Key

1. Solve by factoring : $4x^2 = 24x + 28$ $4x^2-24x-28=0$

$4(x^2-6x-7)=0$ $x^2-7x+1x-7$

$-7 \times 1 = -7$ $x(x-7)+1(x-7)$

$-7+1=-6$ $(x-7)(x+1)$

Factored Form: $4(x-7)(x+1)$

Solution: $x=7, x=-1$

2. Solve by completing the Square: $3x^2 - 4 = 12x + 20$

$\frac{3x^2}{3}-\frac{12x}{3}-\frac{24}{3}=\frac{0}{3}$

$\left(\frac{b}{2}\right)^2=\left(\frac{-4}{2}\right)^2$ $x^2-4x-8=0$

$=2^2=4$ $x^2-4x+4=8+4$

$(x-2)^2=12$

$\sqrt{(x-2)^2}=\pm\sqrt{12}$

$x-2=\pm\sqrt{12}$

$x=2\pm\sqrt{12}$

Solution: $x=2\pm\sqrt{12}$

3. Use quadratic formula to solve: $5x^2 = 2x + 6$

$5x^2-2x-6=0$

Quadratic Equation: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

$a=5$, $b=-2$, $c=-6$

$b^2-4ac = 2^2-(4\cdot5\cdot-6) = 4+120 = 124$

$= x = \frac{2\pm\sqrt{124}}{2(5)} = \frac{2\pm\sqrt{124}}{10}$

Discriminant 124

Nature of solution: $124>0$, 2 Real

Solution(s) _____

$\hookrightarrow \frac{2\pm\sqrt{124}}{10}$