Math 41
Quiz 1
January 20, 2016

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"calculators, you don't need no stinkin' calculators"

1. Solve the equation for x, if possible. $x+4=\sqrt{x+10}$

$(x+4)^2=\left(\sqrt{x+10}\right)^2$

$x^2+8x+16=x+10$

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

$(x+6)(x+1)=0$

$x+6=0 \quad x+1=0$

$x=-6 \quad x=-1$

check

$x=-6$

$-6+4=\sqrt{-6+10}$

$-2\neq\sqrt{4}$

extraneous

$x\neq-6$

check $x=-1$

$-1+4=\sqrt{-1+10}$

$3=\sqrt{9}$ ✓

$x=-1$

2. Solve the equation for x. $x(x-2)=1$

$x^2-2x=1$

$x^2-2x-1=0$

$x=\dfrac{-b\pm\sqrt{b^2-4ac}}{2a}$

$x=\dfrac{-(-2)\pm\sqrt{(-2)^2-4(1)(-1)}}{2(1)}$

$x=\dfrac{2\pm\sqrt{4+4}}{2}$

$x=\dfrac{2\pm\sqrt{8}}{2}$

$x=\dfrac{2\pm2\sqrt{2}}{2}$

$x=\dfrac{\cancel{2}(1\pm\sqrt{2})}{\cancel{2}}$

$x=1\pm\sqrt{2}$

In order to post grades, please provide a four digit number that you can recall.
*It does **not** need to be your psu id#*

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