SOLUTIONS

Math 71B Summer 2006 Name:

QUIZ #3 @ 20 points
Sections 7.6 & 7.7

Write neatly. Use a pencil. Show work in order to get credit. No proof, no credit given.

1. Solve each radical equation.

a) $\sqrt{3x-2}=4$ /^{2}

$\left(\sqrt{3x-2}\right)^2 = 4^2$

$3x-2 = 16$

$3x = 18$

$x = \frac{18}{3}$

check $\sqrt{3\cdot\frac{18}{3}-2} \stackrel{?}{=} 4$

$\sqrt{18-2} \stackrel{?}{=} 4$

$\sqrt{16} = 4$ true

The solution set is $\left\{\frac{18}{3}\right\}$

b) $\sqrt{5x+1}=x+1$ /^{2}

$\left(\sqrt{5x+1}\right)^2 = (x+1)^2$

$5x+1 = x^2+2x+1$

$5x = x^2+2x$

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

$x^2-3x=0$

$x(x-3)=0$ $\Leftarrow$ $x=0$ OR $x=3$

check $x=0$

$\sqrt{5(0)+1} \stackrel{?}{=} 0+1$

$\sqrt{1}=1$ true

$\Rightarrow x=0$ is a solution

check $x=3$

$\sqrt{5\cdot 3+1} \stackrel{?}{=} 3+1$

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The solution set is $\{0,3\}$

2. Do the following operations.

a) $(10+7i)-(5+4i)$ =

$= 10+7i-5-4i$

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b) $(3+5i)(3-5i)$ $= 3^2-(5i)^2$

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$= 9-(25)(-1)$

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c) $\frac{2i}{1+i} = \frac{2i(1-i)}{(1+i)(1-i)} = \frac{2i(1-i)}{1^2-i^2}$ /$(1-i)$

$= \frac{2i(1-i)}{1-(-1)}$

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$\sqrt{18-2} \stackrel{?}{=} 4$

$\sqrt{16} = 4$ true

The solution set is $\left\{\frac{18}{3}\right\}$

b) $\sqrt{5x+1}=x+1$ /^{2}

$\left(\sqrt{5x+1}\right)^2 = (x+1)^2$

$5x+1 = x^2+2x+1$

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2. Do the following operations.

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$= 9-(25)(-1)$

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$= 34$

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$= \frac{2i(1-i)}{1-(-1)}$

$= \frac{2i(1-i)}{2} = i(1-i) = i-i^2 = i-(-1) = 1+i$

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Math 71B Summer 2006 Name:

QUIZ #3 @ 20 points
Sections 7.6 & 7.7

Write neatly. Use a pencil. Show work in order to get credit. No proof, no credit given.

1. Solve each radical equation.

a) $\sqrt{3x-2}=4$ /^{2}

$\left(\sqrt{3x-2}\right)^2 = 4^2$

$3x-2 = 16$

$3x = 18$

$x = \frac{18}{3}$

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