Name Schlansky
Mr. Schlansky

Date _____
Algebra I

Algebra I Practice for Geometry

Reducing Radicals

3) **Separate into two radicals (perfect squares and non perfect squares). Find the largest perfect square that divides in**
4) **Take the square root of the perfect square. Bring the non-perfect square down**

PS
1
4
9
16
25
36
49
64
81
100

1. $\sqrt{45}$ PS $\sqrt{9}$ NPS $\sqrt{5}$ $3\sqrt{5}$

2. $\sqrt{50}$ PS $\sqrt{25}$ NPS $\sqrt{2}$ $5\sqrt{2}$

3. $\sqrt{162}$ PS $\sqrt{81}$ NPS $\sqrt{2}$ $9\sqrt{2}$

4. $\sqrt{32}$ PS $\sqrt{16}$ NPS $\sqrt{2}$ $4\sqrt{2}$

5. $\sqrt{48}$ PS $\sqrt{16}$ NPS $\sqrt{3}$ $4\sqrt{3}$

6. $\sqrt{75}$ PS $\sqrt{25}$ NPS $\sqrt{3}$ $5\sqrt{3}$

7. $\sqrt{48}$ PS $\sqrt{16}$ NPS $\sqrt{3}$ $4\sqrt{3}$

8. $\sqrt{200}$ PS $\sqrt{100}$ NPS $\sqrt{2}$ $10\sqrt{2}$

9. $\sqrt{98}$ PS $\sqrt{49}$ NPS $\sqrt{2}$ $7\sqrt{2}$

10. $\sqrt{125}$ PS $\sqrt{25}$ NPS $\sqrt{5}$ $5\sqrt{5}$

11. $\sqrt{147}$ PS $\sqrt{49}$ NPS $\sqrt{3}$ $7\sqrt{3}$

12. $\sqrt{192}$ PS $\sqrt{64}$ NPS $\sqrt{3}$ $8\sqrt{3}$

Solving Quadratic Equations

4) **Bring everything to one side**
5) **Factor**
6) **Set each factor equal to zero**

1. $y^2 - 5y + 6 = 0$

$(y-6)(y+1)=0$

$y-6=0$ | $y+1=0$

$+6\ +6$ | $-1\ -1$

$y=6$ | $y=-1$

2. $x^2 + 4x = 45$

$-45\ -45$

$x^2+4x-45=0$

$(x+9)(x-5)=0$

$x+9=0$ | $x-5=0$

$-9\ -9$ | $+5\ +5$

$x=-9$ | $x=5$

3. $a^2 - 8a = 20$

$-20\ -20$

$a^2-8a-20=0$

$(a-10)(a+2)=0$

$a-10=0$ | $a+2=0$

$+10\ +10$ | $-2\ -2$

$a=10$ | $a=-2$

4. $n^2 = 3n + 18$

$-3n-18\ -3n-18$

$n^2-3n-18=0$

$(n-6)(n+3)=0$

$n-6=0$ | $n+3=0$

$+6\ +6$ | $-3\ -3$

$n=6$ | $n=-3$

5. $x^2 - 7x = 3x - 16$

$-3x+16\ -3x+16$

$x^2-10x+16=0$

$(x-8)(x-2)=0$

$x-8=0$ | $x-2=0$

$+8\ +8$ | $+2\ +2$

$x=8$ | $x=2$

6. $x(x-2) = 3(x+8)$

$x^2-2x=3x+24$

$-3x-24\ -3x-24$

$x^2-5x-24=0$

$(x-8)(x+3)=0$

$x-8=0$ | $x+3=0$

$+8\ +8$ | $-3\ -3$

$x=8$ | $x=-3$

In Terms of x

3) **Call the last thing x**
4) **Express everything else in terms of x**

1. Jamie is 5 years older than her sister Amy. If the sum of their ages is 19, how old is Jamie?

J: $x+5$
A: x

$x+x+5=19$

$2x+5=19$

$-5\ -5$

$\frac{2x}{2}=\frac{14}{2}$

$x=7$

$J=7+5=12$

2. Jack's age is 6 less than double Jill's age. If the sum of their ages is 30, how old is Jill?

Jack: $2x-6$
Jill: x

$2x-6+x=30$

$3x-6=30$

$+6\ +6$

$\frac{3x}{3}=\frac{36}{3}$

$x=12$

$Jill=12$

3. Ben has four more than twice as many CDs as Jake. If they have a total of 31 CDs, how many CDs does Jake have?

B: $2x+4$
J: x

$2x+4+x=31$

$3x+4=31$

$-4\ -4$

$\frac{3x}{3}=\frac{27}{3}$

$x=9$

$J=9$

4. Three times as many robins as cardinals visited a bird feeder. If a total of 20 robins and cardinals visited the feeder, how many were robins?

R: $3x$
C: x

$3x+x=20$

$\frac{4x}{4}=\frac{20}{4}$

$x=5$

$R=3(5)=15$