Answer Key - Word Problems Review Sheet

1. x: the # **-1** $5x - 4 = 7x - 2$ $5x - 2 = 7x$ $\quad -2 = 2x$ $\quad -1 = x$	2. x: 1st consecutive odd integer **9** $\quad$ x + 2: 2nd " " " **11** $x + x + 2 = 20$ $\quad 2x + 2 = 20$ $\quad\quad 2x = 18$ $\quad\quad x = 9$
3. x: 1st consecutive even integer **18** $\quad$ x + 2: 2nd consec. even integer **20** $x + x + 2 = 3x - 16$ $\quad 2x + 2 = 3x - 16$ $\quad\quad 2 = x - 16$ $\quad\quad 18 = x$	4. A $\quad\quad$ B $\quad$ 600 km/hr $\quad$ 340 km/hr $\quad\quad$ 2,820 km x: # of hours **3 hours** Distance of A + Distance of B = Total Dist. (A & B) $\quad\quad$ RT + RT = D $\quad\quad$ 600x + 340x = 2820 $\quad\quad\quad\quad 940x = 2820$ $\quad\quad\quad\quad x = 3$
5. A $\quad$ B $\quad$ 65 mph $\quad$ 40 mph $\quad\quad$ 1,050 miles x: # of hours **10 hours** Distance of A + Distance of B = Total Dist. (A & B) $\quad\quad$ RT + RT = D $\quad\quad$ 65x + 40x = 1050 $\quad\quad\quad$ 105x = 1050 $\quad\quad\quad\quad x = 10$	6. <table><tr><th></th><th>Value</th><th>Quantity</th><th>Total Value</th></tr><tr><td>pennies</td><td>1</td><td>x</td><td>x</td></tr><tr><td>nickels</td><td>5</td><td>2x</td><td>10x</td></tr><tr><td>dimes</td><td>10</td><td>45-(x+2x)</td><td>10(45-3x)</td></tr></table> $x + 10x + 10(45 - 3x) = 260$ $x + 10x + 450 - 30x = 260$ $\quad -19x + 450 = 260$ $\quad\quad -19x = -190$ $\quad\quad x = 10$ **10 pennies, 20 nickels, 15 dimes**
7. <table><tr><th></th><th>Value</th><th>Quantity</th><th>Total Value</th></tr><tr><td>nickels</td><td>5</td><td>4x</td><td>20x</td></tr><tr><td>dimes</td><td>10</td><td>x</td><td>10x</td></tr></table> $10x + 20x = 720$ $\quad 30x = 720$ $\quad\quad x = 24$ **24 dimes and 96 nickels**	8. <table><tr><th></th><th>Now</th><th>Past (-x)</th></tr><tr><td>Amy</td><td>16</td><td>16-x</td></tr><tr><td>Jane</td><td>10</td><td>10-x</td></tr></table> x: # of years ago **4** $16 - x = 2(10 - x)$ $16 - x = 20 - 2x$ $16 + x = 20$ $\quad x = 4$
9. $\quad 62 - x + 6 = 2(x + 6) - 4$ $\quad\quad 68 - x = 2x + 12 - 4$ $\quad\quad 68 - x = 2x + 8$ $\quad\quad\quad 68 = 3x + 8$ $\quad\quad\quad 60 = 3x$ $\quad\quad\quad 20 = x$	<table><tr><th></th><th>Now</th><th>Future (+6)</th></tr><tr><td>John</td><td>x</td><td>x+6</td></tr><tr><td>mom</td><td>62-x</td><td>(62-x) + 6 68-x</td></tr></table> **John is 20 yrs. old and Mom is 42 yrs. old**

10.

Tickets	Value	Quantity	Total Value
adults	3	x	3x
children	2	350-x	2(350-x)

$$3x + 2(350 - x) = 950$$
$$3x + 700 - 2x = 950$$
$$x + 700 = 950$$
$$x = 250$$

250 adult tickets and 100 child tickets

11.

Tickets	Value	Quantity	Total Value
members	3.50	x	3.50x
non-members	5.00	x-20	5(x-20)

$$3.5x + 5(x - 20) = 750$$
$$3.5x + 5x - 100 = 750$$
$$8.5x - 100 = 750$$
$$8.5x = 850$$
$$x = 100$$

100 member tickets and 80 non-member tickets

12.

Stamps	Value	Quantity	Total Value
$0.15	15	x	15x
$0.20	20	50-x	20(50-x)

$$15x + 20(50 - x) = 950$$
$$15x + 1000 - 20x = 950$$
$$-5x + 1000 = 950$$
$$-5x = -50$$
$$x = 10$$

John has 10 stamps worth 15 cents and 40 stamps worth 20 cents

13.

	Peanuts	Quantity	Total Value
Brand A	.35	x	.35x
Brand B	.25	21-x	.25(21-x)

$$.35x + .25(21 - x) = .29(21)$$
$$.35x + 5.25 - .25x = 6.09$$
$$.10x + 5.25 = 6.09$$
$$.10x = .84$$
$$x = 8.4$$

8.4 oz of Brand A and 12.6 oz of Brand B

14.   x = # of hours for Paul to complete the job **11.25 hours**

$$\frac{1}{x} + \frac{1}{9} = \frac{1}{5} \qquad LCD = 45x$$

$$45x\left(\frac{1}{x}\right) + 45x\left(\frac{1}{9}\right) = 45x\left(\frac{1}{5}\right)$$

$$45 + 5x = 9x$$
$$45 = 4x$$
$$45/4 = x$$
$$11.25 = x$$